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Proposed Greater Mooses Tooth Two Development Project

Supplemental Environmental Impact Statement for the Alpine Satellite Development Plan



FINAL
Volume 2: Maps



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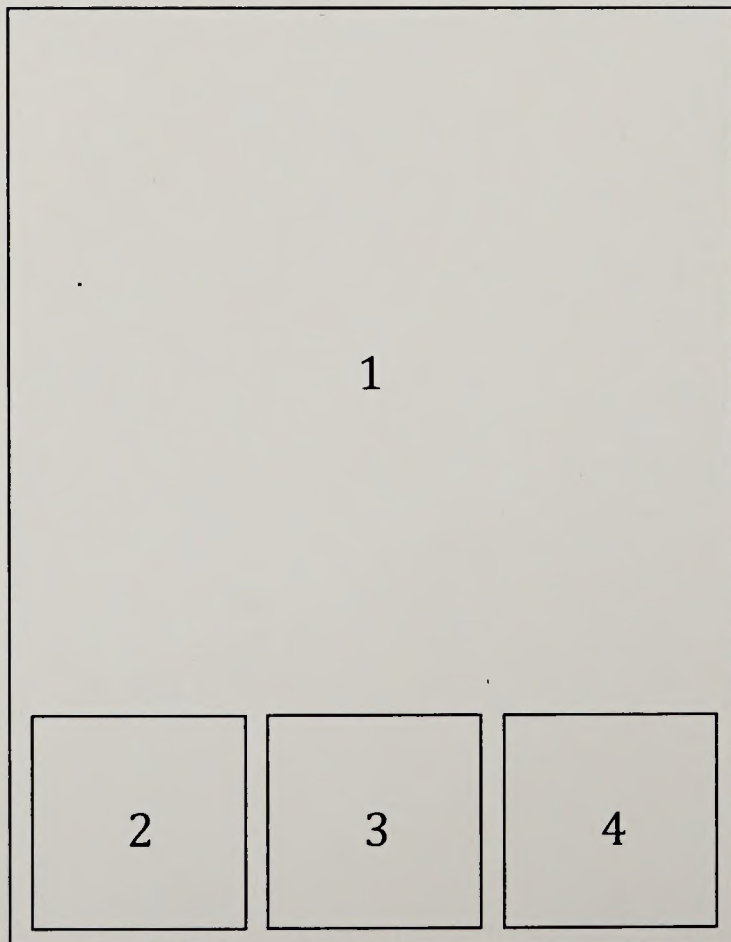
Our Vision

To enhance the quality of life for all citizens
through the balanced stewardship of America's
public lands and resources.

Our Mission

To sustain the health, diversity, and productivity
of the public lands for the use and enjoyment
of present and future generations.

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BLM Cover Photos

1. Aerial of production pad, North Slope
© ConocoPhillips
2. Caribou, National Petroleum Reserve, Alaska
3. Crea Creek flowing into Lake L9819,
National Petroleum Reserve, Alaska
4. White-fronted goose, National Petroleum
Reserve, Alaska

Alpine Satellite Development Plan for the Proposed Greater Moose Tooth 2 Development Project

Final Supplemental Environmental Impact Statement

Volume 2: Maps

Prepared by:

U.S. Department of the Interior
Bureau of Land Management
Anchorage, AK

In cooperation with:

Native Village of Nuiqsut
U.S. Army Corps of Engineers
U.S. Environmental Protection Agency
U.S. DOI Fish and Wildlife Service
U.S. DOI Bureau of Ocean Energy Management
State of Alaska
North Slope Borough
Inupiat Community of the Arctic Slope

August 2018

Total Cost of Producing the EIS: \$1.1 Million

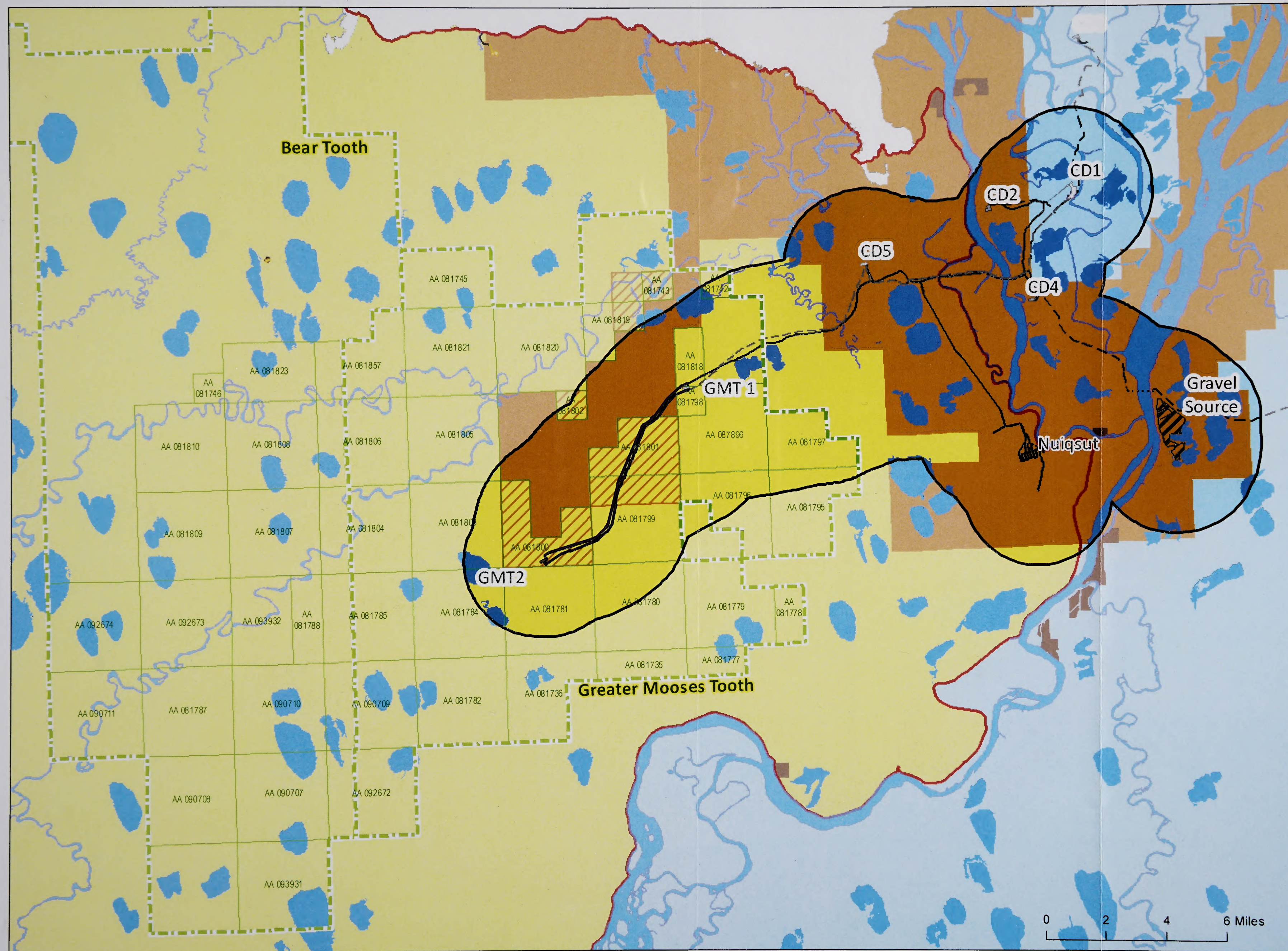
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GMT-2 Proposed Infrastructure

- Alt. A Pipeline
- Alt. A Road
- GMT-2 Proposed Pads

Existing & GMT- 1 Permitted Infrastructure

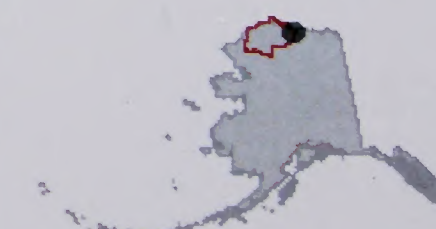
- Road
- Pipeline
- Gravel Source
- Pad

Notional Participating Areas / Oil & Gas Producing Units and Lease Tracts within the NPR-A

Land Status

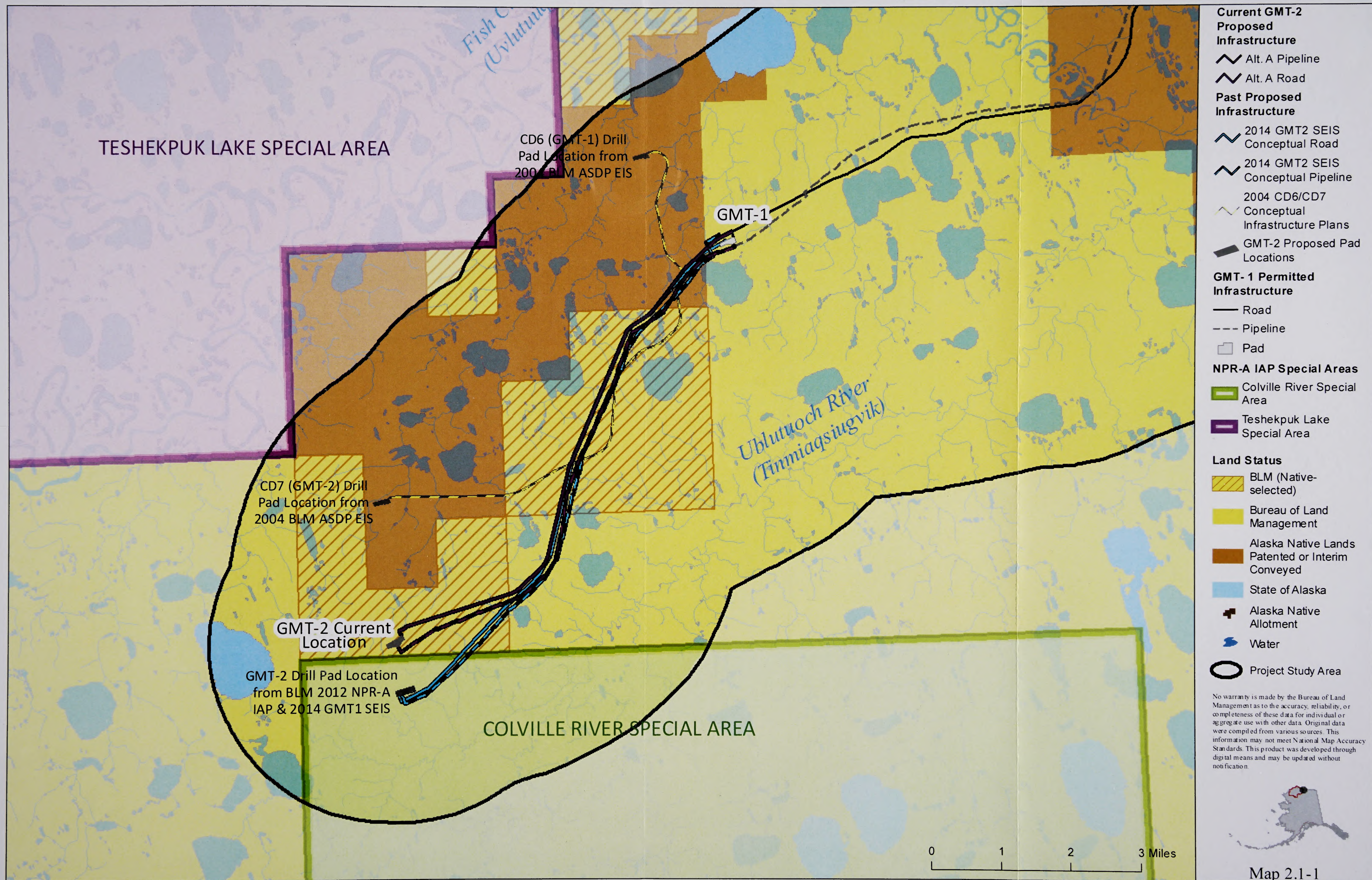
- BLM (Native-selected)
- Bureau of Land Management
- Alaska Native Lands Patented or Interim Conveyed
- State of Alaska
- Alaska Native Allotment
- Water
- National Petroleum Reserve in Alaska Boundary
- Project Study Area

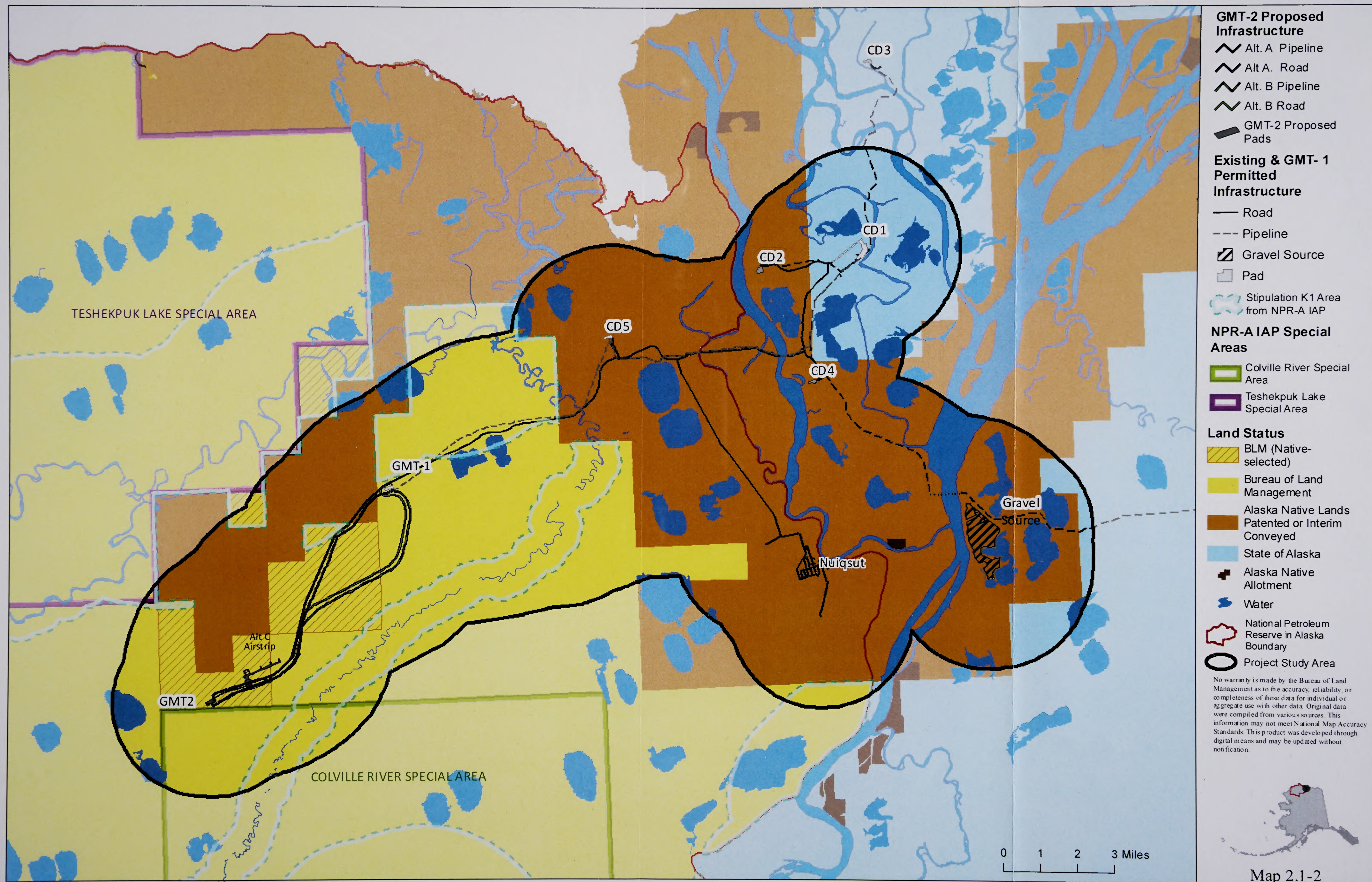
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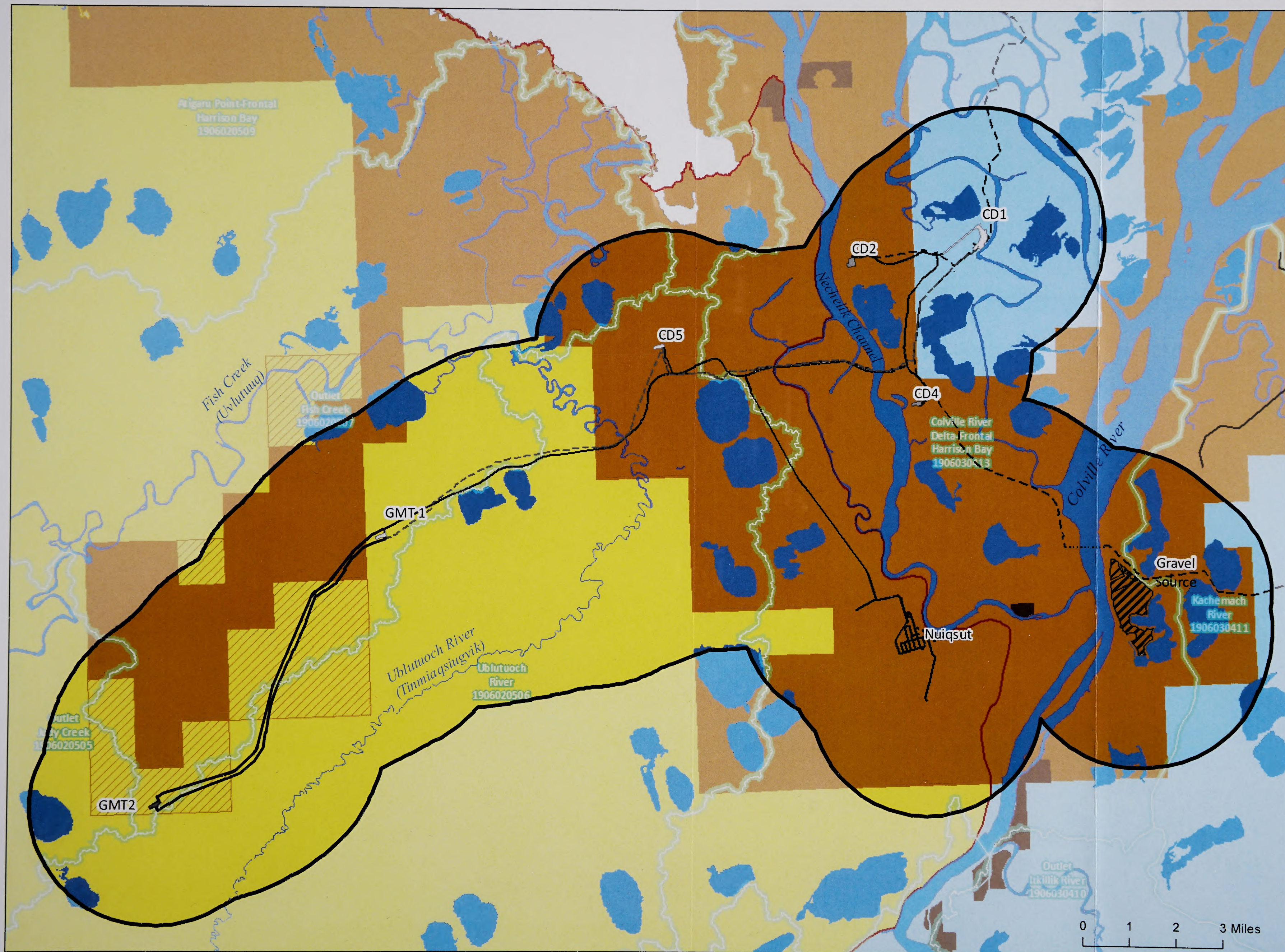


0 2 4 6 Miles

Map 1.1-1







GMT-2 Proposed Infrastructure

- Alt. A Pipeline
- Alt. A Road
- GMT-2 Proposed Pads

Existing & GMT-1 Permitted Infrastructure

- Road
- Pipeline
- Gravel Source
- Pad

Watershed Boundary Dataset (WBD) - 5th Level

Land Status

- BLM (Native-selected)
- Bureau of Land Management
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0 1 2 3 Miles

Map 2.5-1

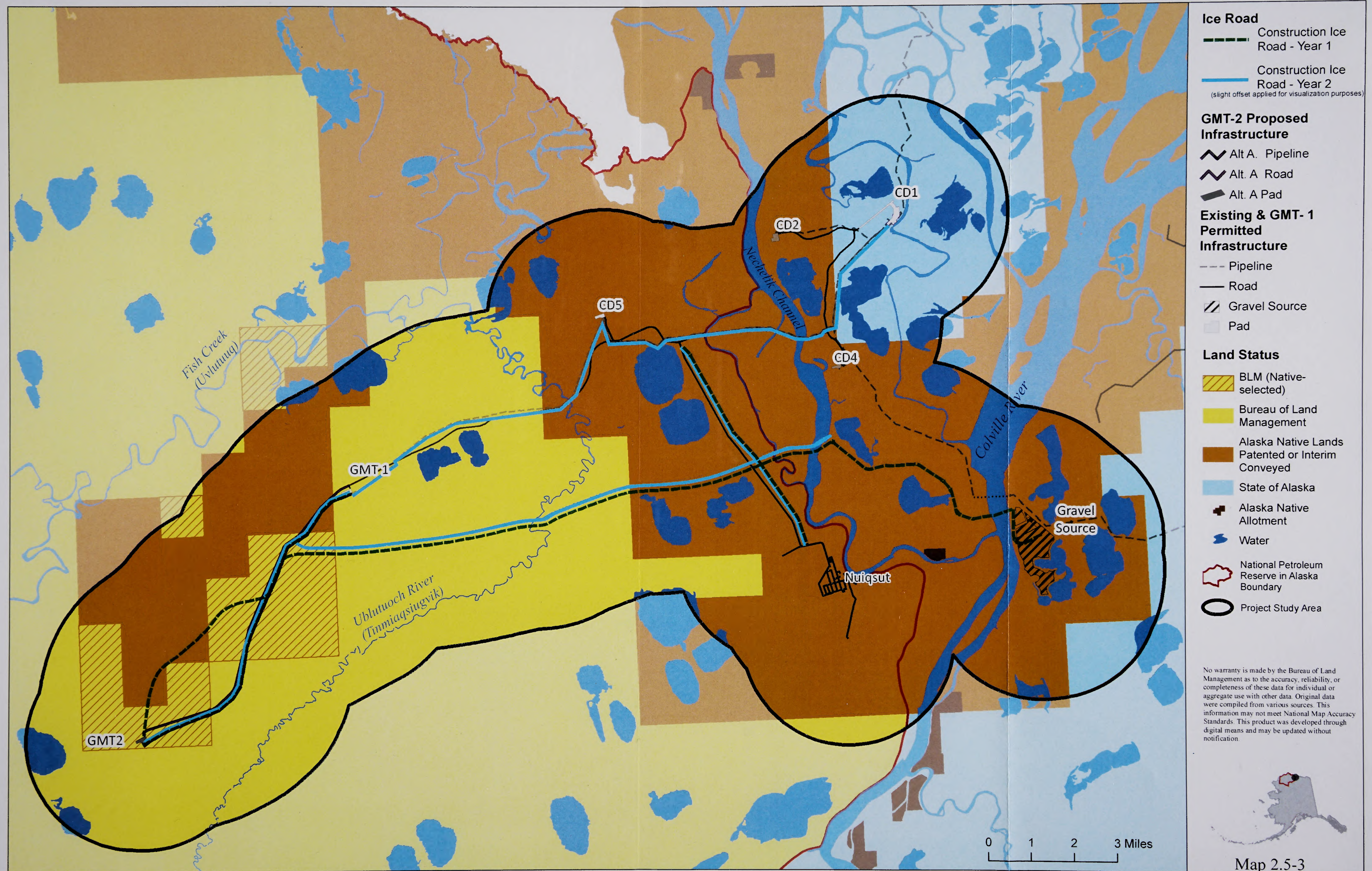


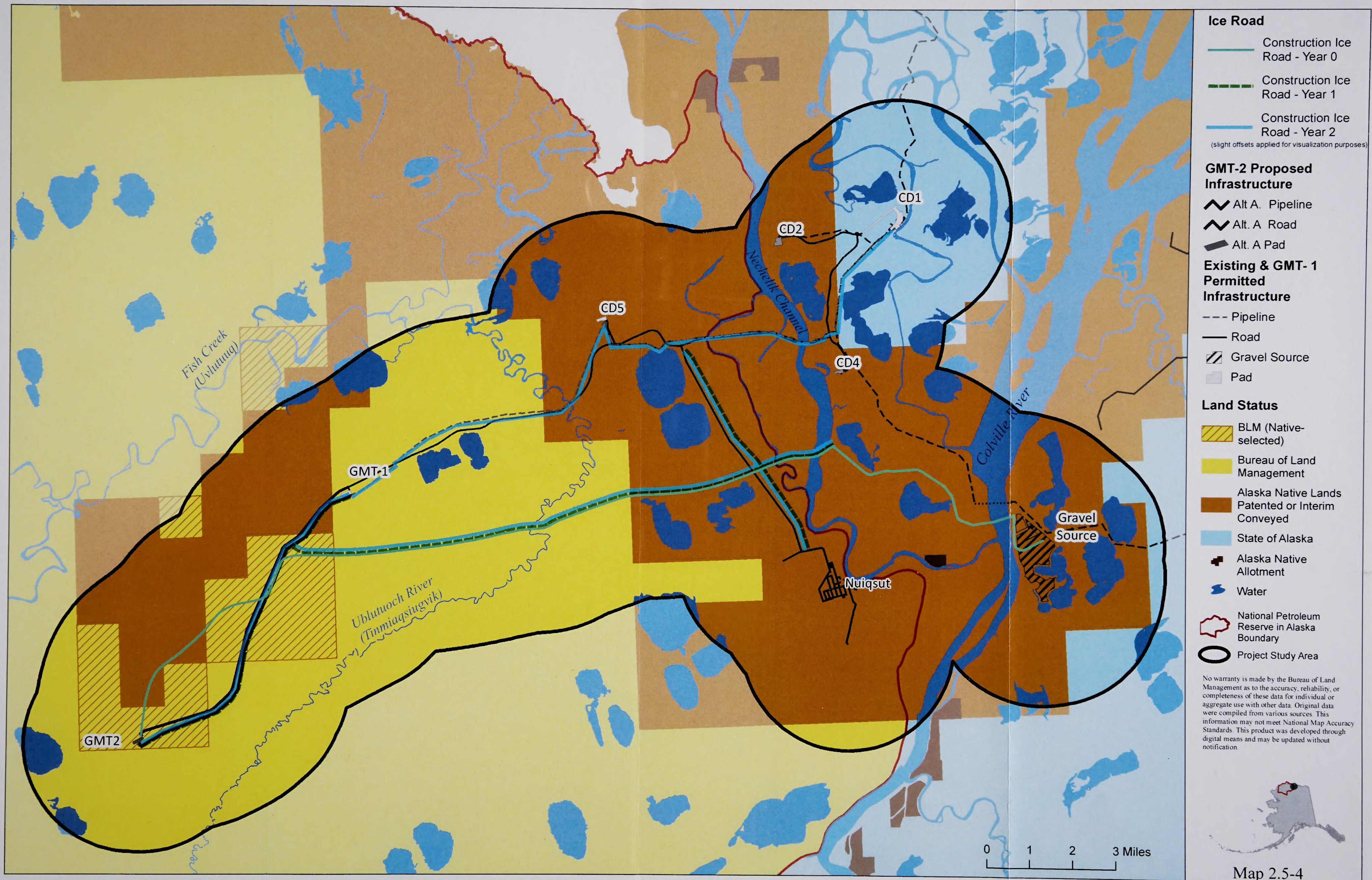
- Road Segments within 500ft of Pipeline
- Infrastructure within 500 ft. of fish-bearing waterbodies
- GMT-2 Proposed Infrastructure**
 - Alt. A Pipeline
 - Alt. A Road
 - Pad
- GMT- 1 Permitted Infrastructure**
 - Road
 - Pipeline
 - Pad
- Project Study Area

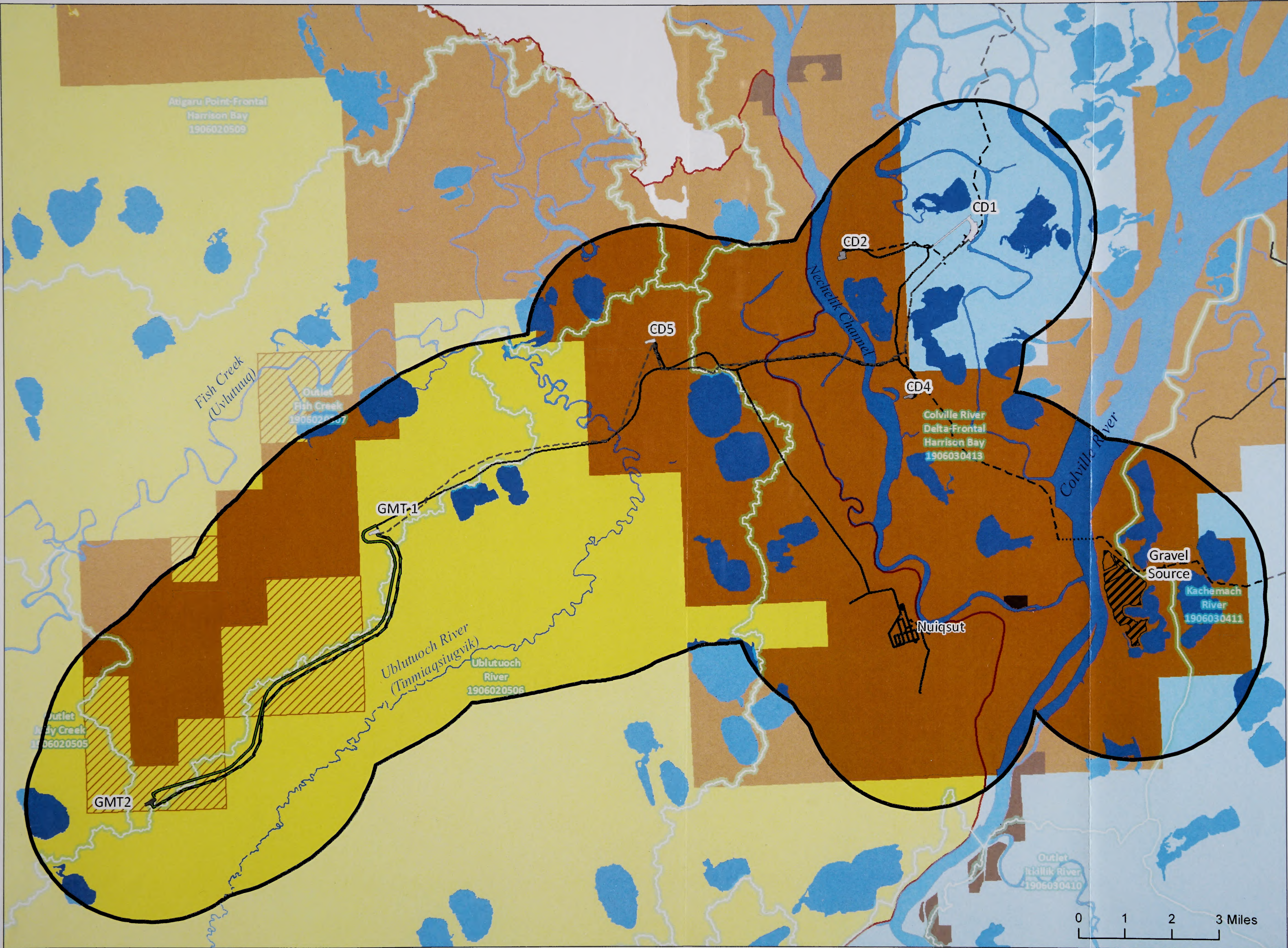
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Map 2.5-2







GMT-2 Proposed Infrastructure

- Alt B Pipeline
- Alt B Road
- Pad

Existing & GMT- 1 Permitted Infrastructure

- Road
- Pipeline
- Gravel Source
- Pad

Watershed Boundary Dataset (WBD) - 5th Level

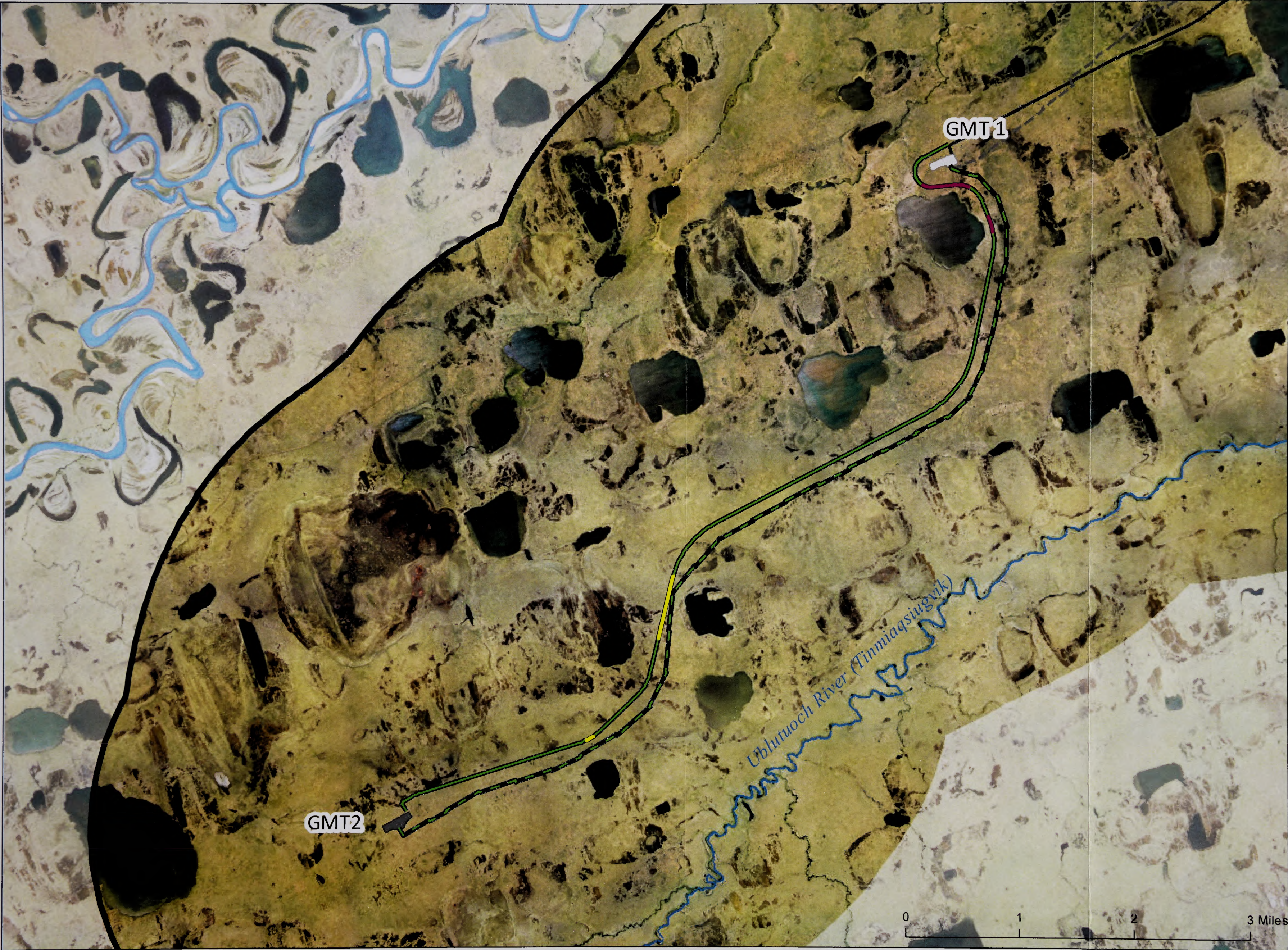
Land Status

- BLM (Native-selected)
- Bureau of Land Management
- Alaska Native Lands Patented or Interim Conveyed
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Map 2.6-1



Road Segments within 500ft of Pipeline

Infrastructure within 500 ft. of fish-bearing waterbodies

GMT-2 Proposed Infrastructure

- Alt B Pipeline
- Alt B Road
- Pad

Existing & GMT- 1 Permitted Infrastructure

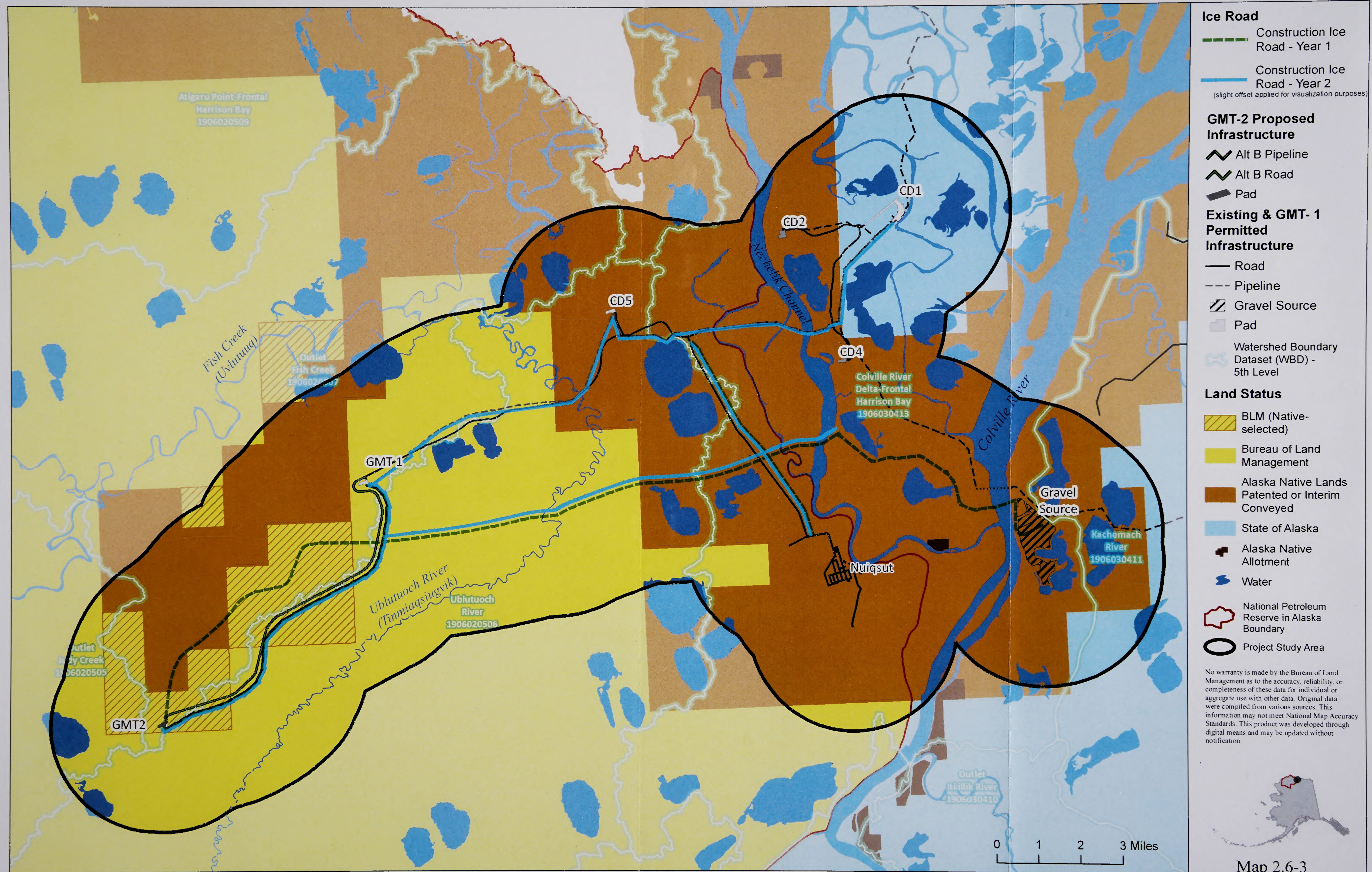
- Road
- Pipeline
- Gravel Source
- Pad

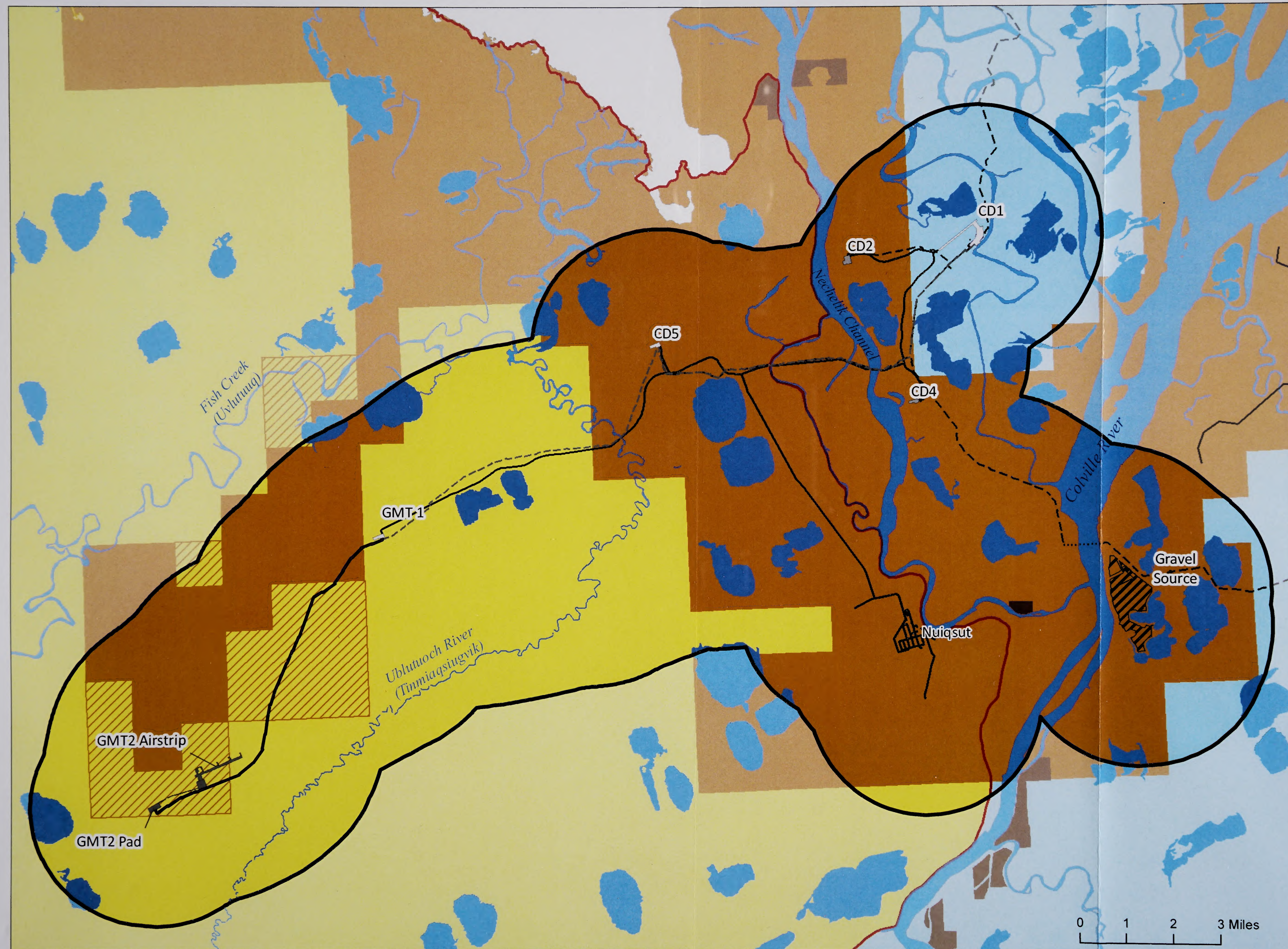
Project Study Area

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Map 2.6-2





GMT-2 Proposed Infrastructure

- Alt. C Pipeline
- Alt. C Pad and Facilities

Existing & GMT-1 Permitted Infrastructure

- Pipeline
- Road
- Gravel Source
- Pad

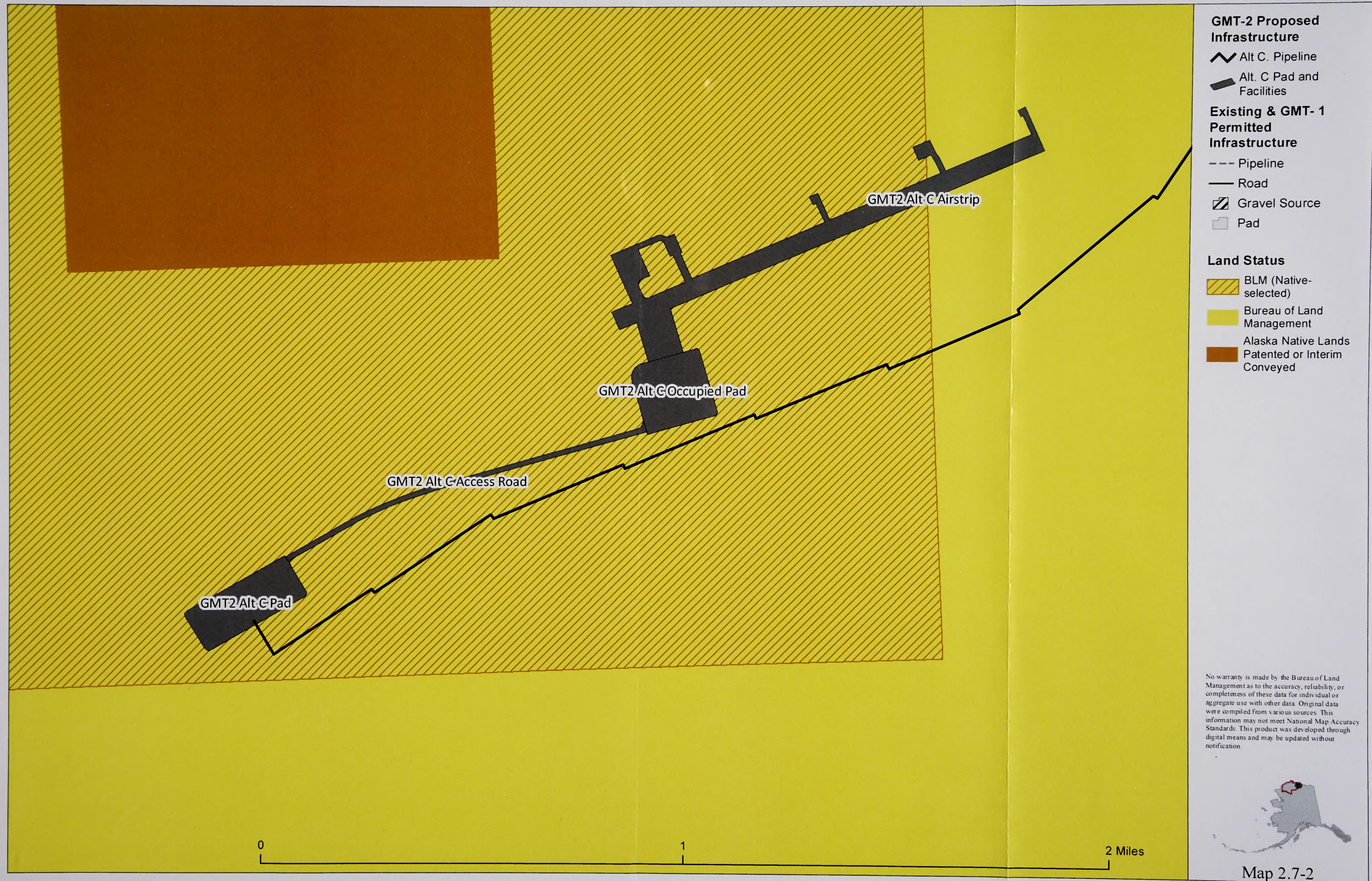
Land Status

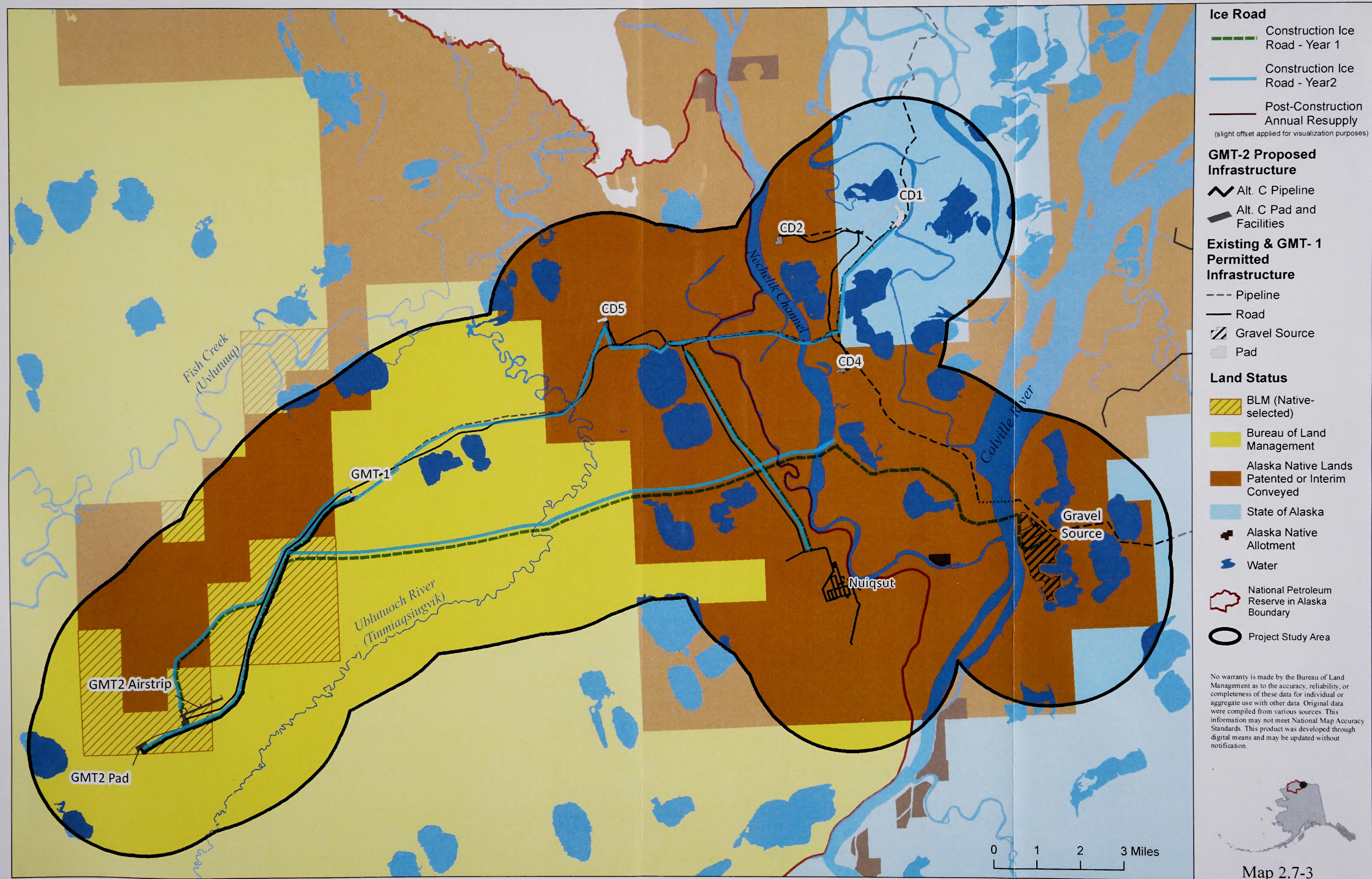
- BLM (Native-selected)
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- State of Alaska
- Alaska Native Allotment
- Water
- National Petroleum Reserve in Alaska Boundary
- Project Study Area

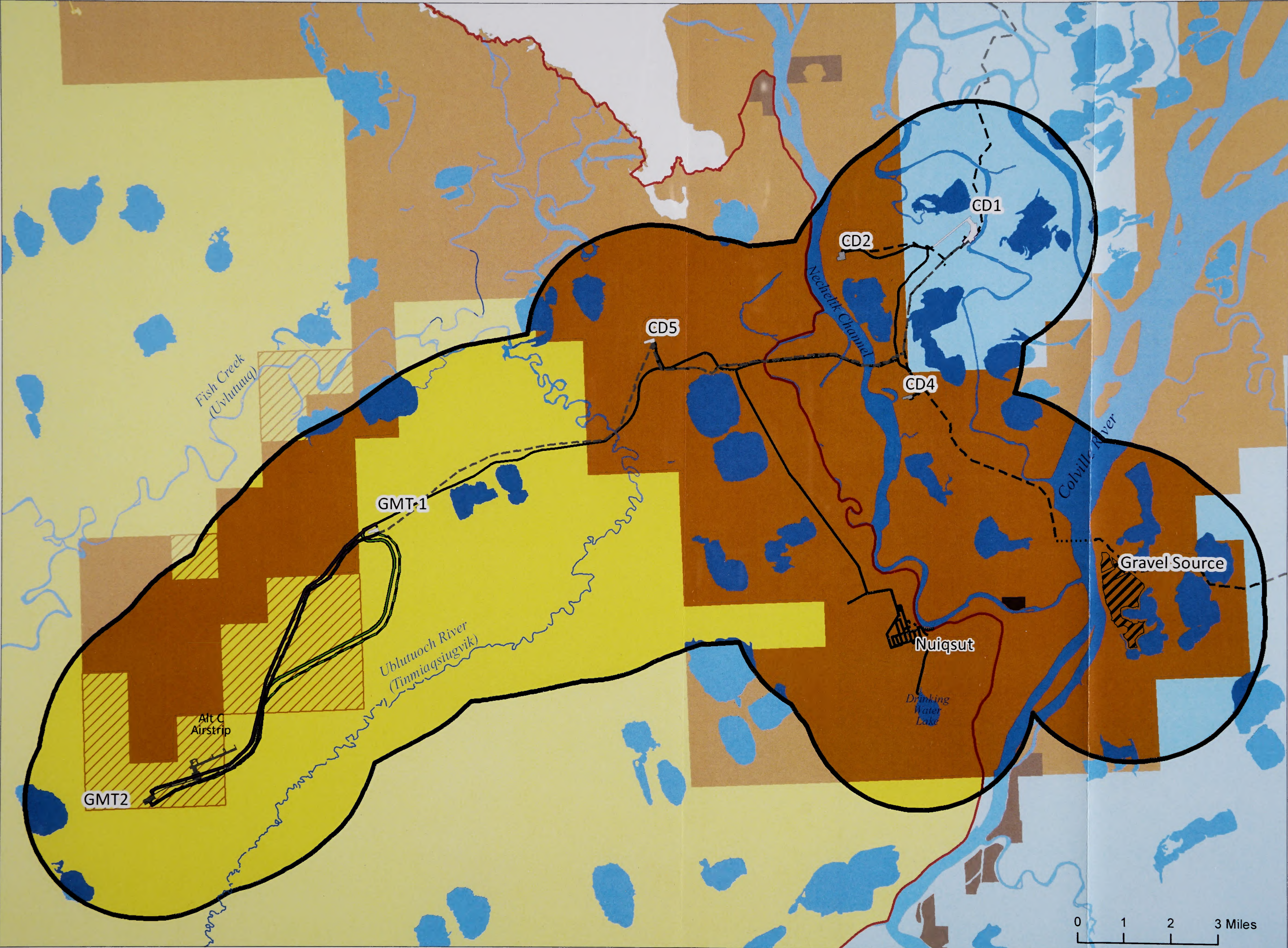
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Map 2.7-1







GMT-2 Proposed Infrastructure

- Alt. A Pipeline
- Alt. A. Road
- Alt. B Pipeline
- Alt. B Road
- GMT-2 Proposed Pads

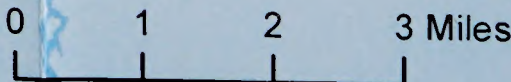
Existing & GMT- 1 Permitted Infrastructure

- Road
- Pipeline
- Gravel Source
- Pad

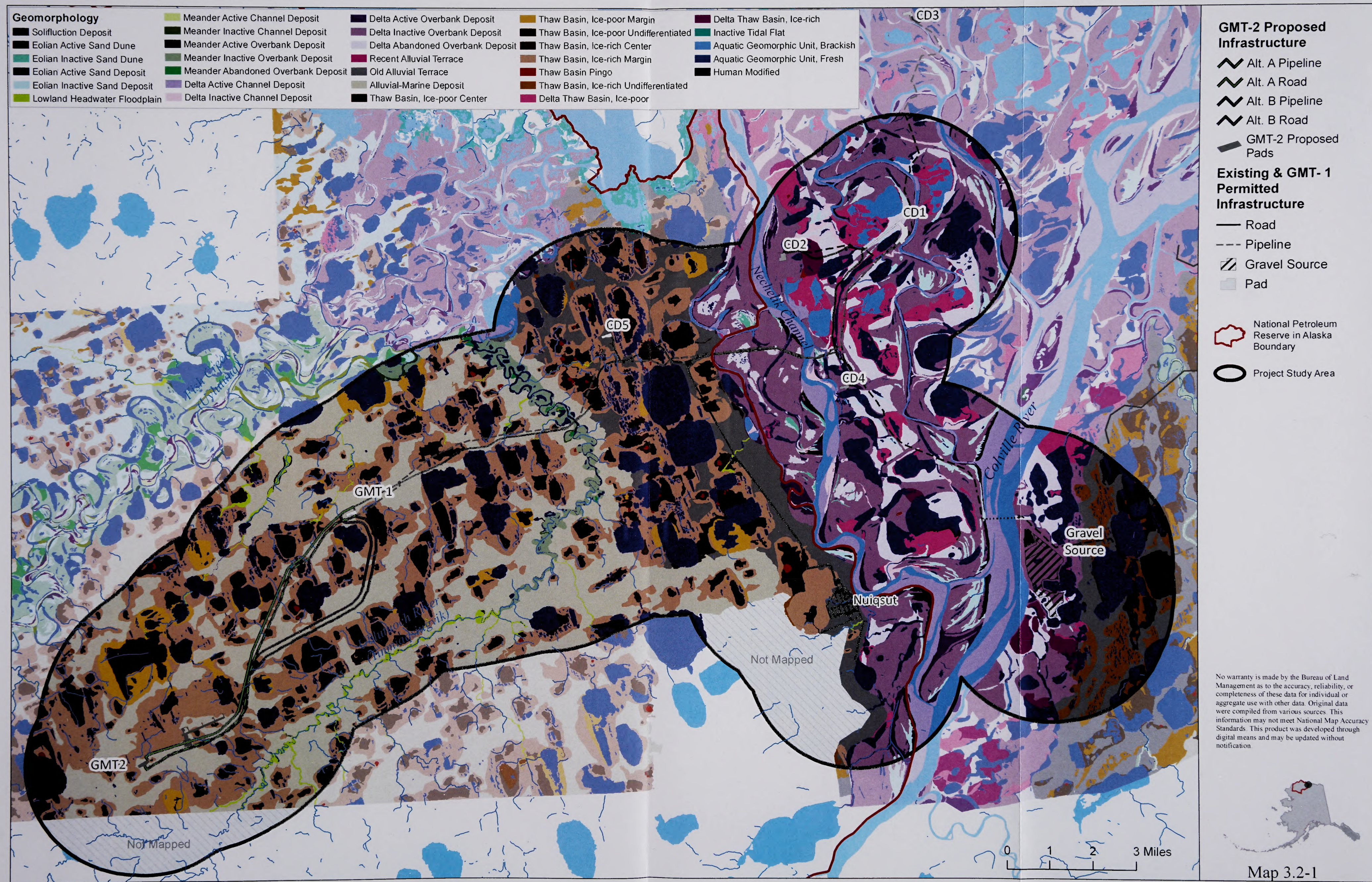
Land Status

- BLM (Native-selected)
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- Water
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- Project Study Area

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Map 3.1-1



- Alt. A Pipeline
- Alt. A Road
- Alt. B Pipeline
- Alt. B Road
- GMT-2 Proposed Pads

— Road
--- Pipeline

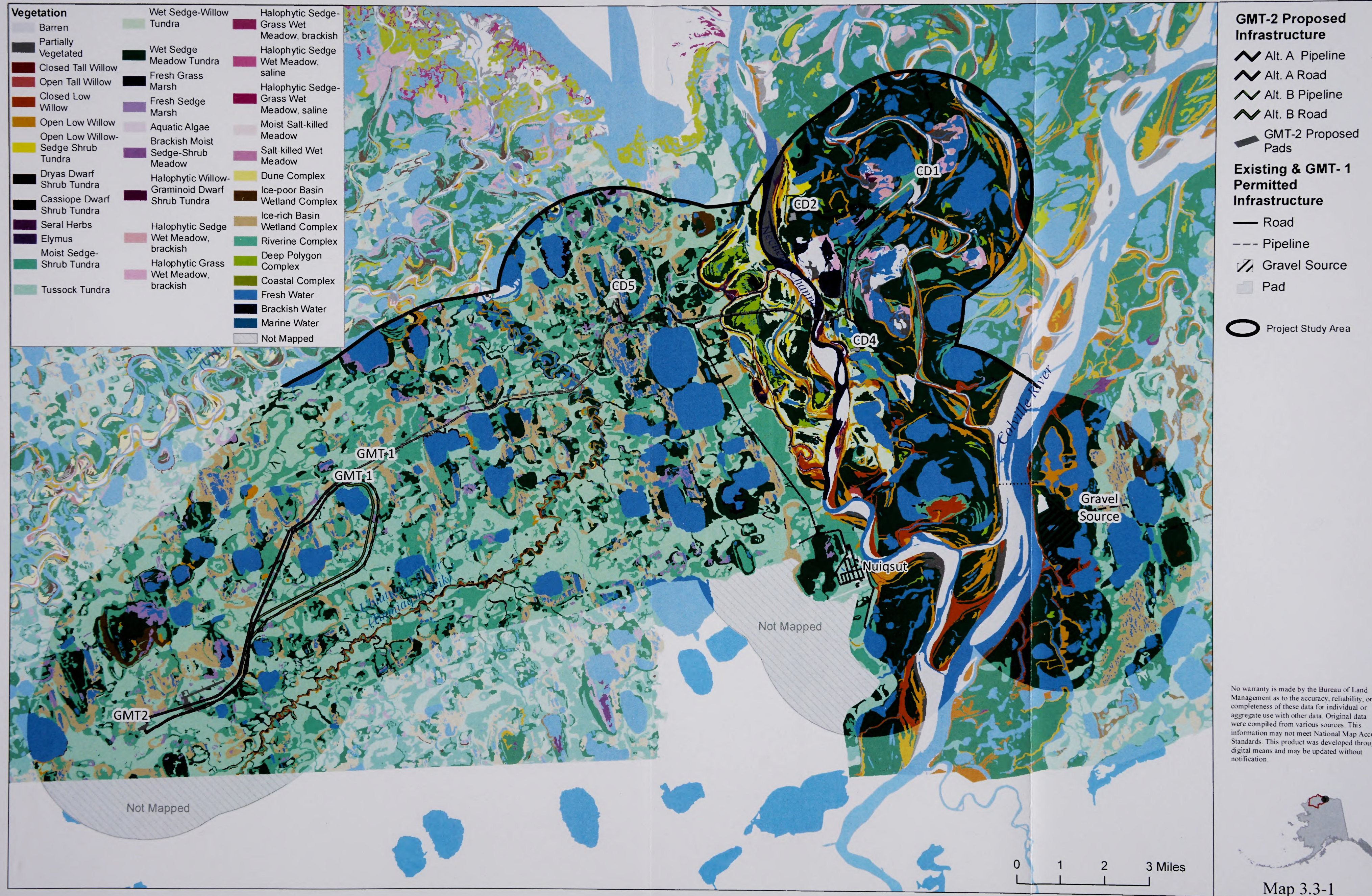
- Gravel Source
- Pad

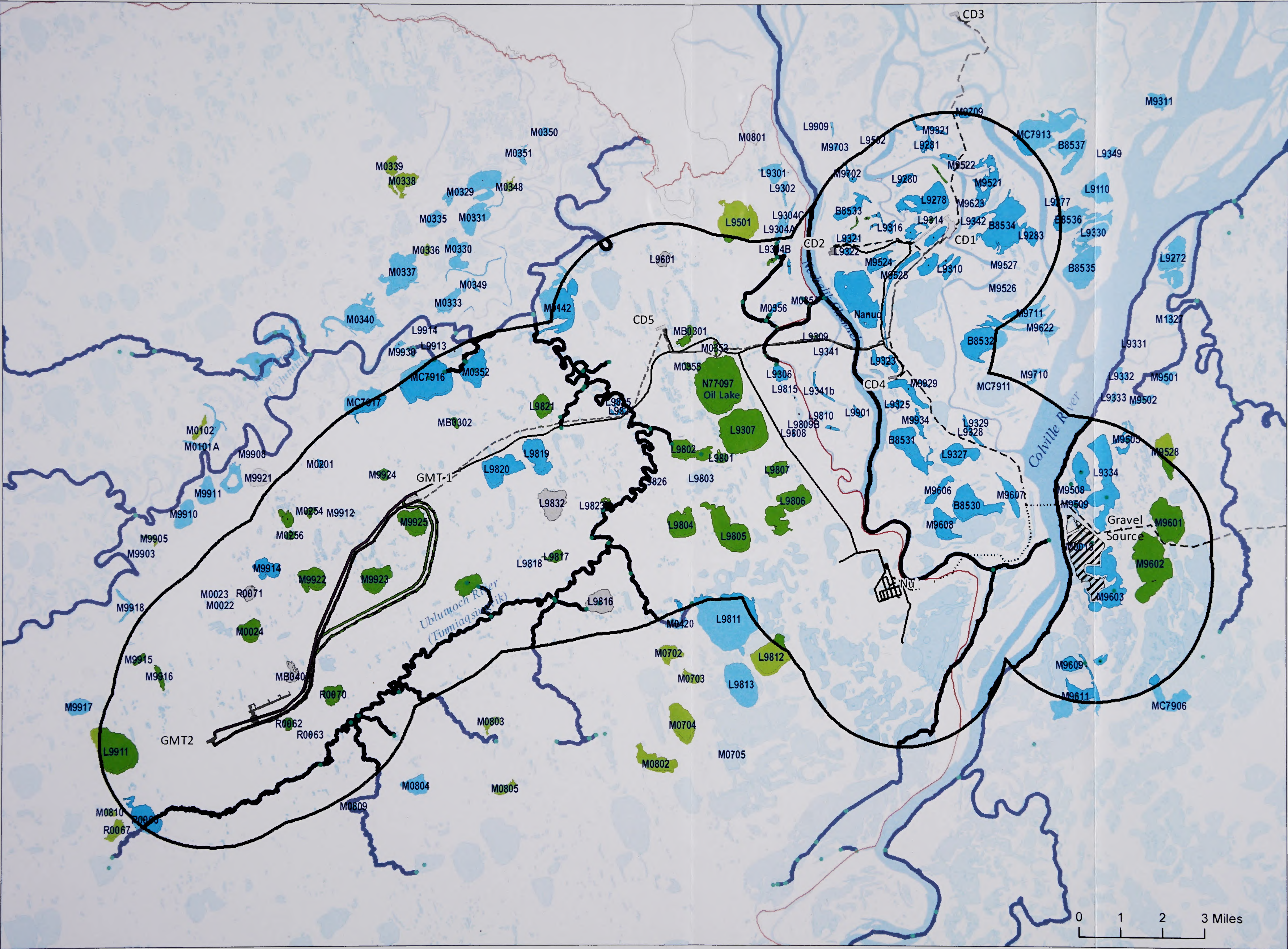
 Project Study Area

Map 3.2-3



0 1 2 3 Miles





- Anadromous Waters Catalog (AWC) - Point
- Anadromous Waters Catalog (AWC) - Line

Lakes Sampled for Water Sources

- Resistant Fish Species (Ninespine stickleback and Alaska blackfish)
- Sensitive Fish Species Present
- No Fish Captured
- Not Sampled

GMT-2 Proposed Infrastructure

- Alt. A Pipeline
- Alt. A. Road
- Alt. B Pipeline
- Alt. B Road
- GMT-2 Proposed Pads

Existing & GMT- 1 Permitted Infrastructure

- Road
- Pipeline
- Gravel Source
- Pad
- National Petroleum Reserve in Alaska Boundary
- Project Study Area

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Map 3.3-2



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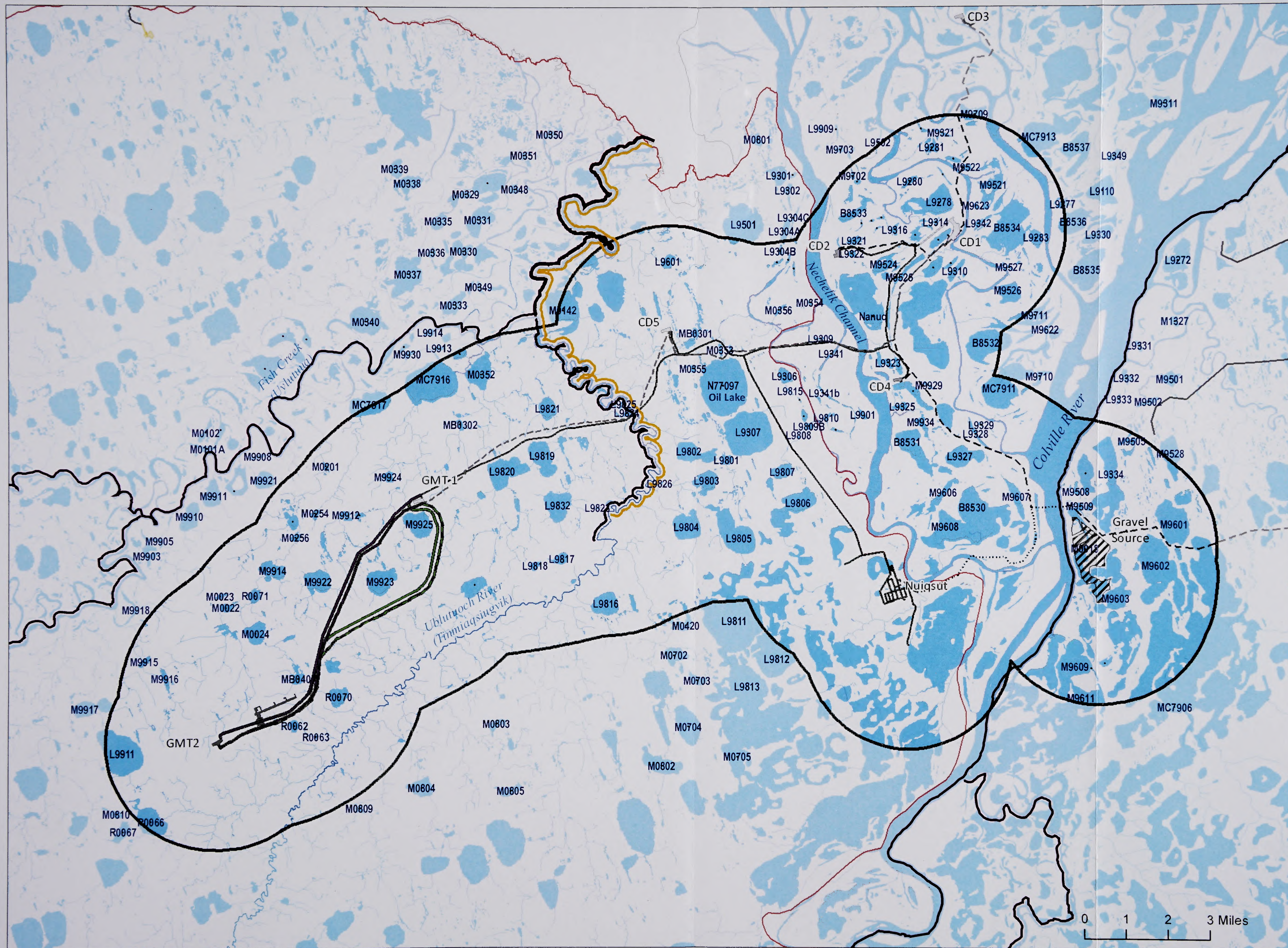
- Alt. A Pipeline
- Alt A. Road
- Alt. B Pipeline
- Alt. B Road
- GMT-2 Proposed Pads

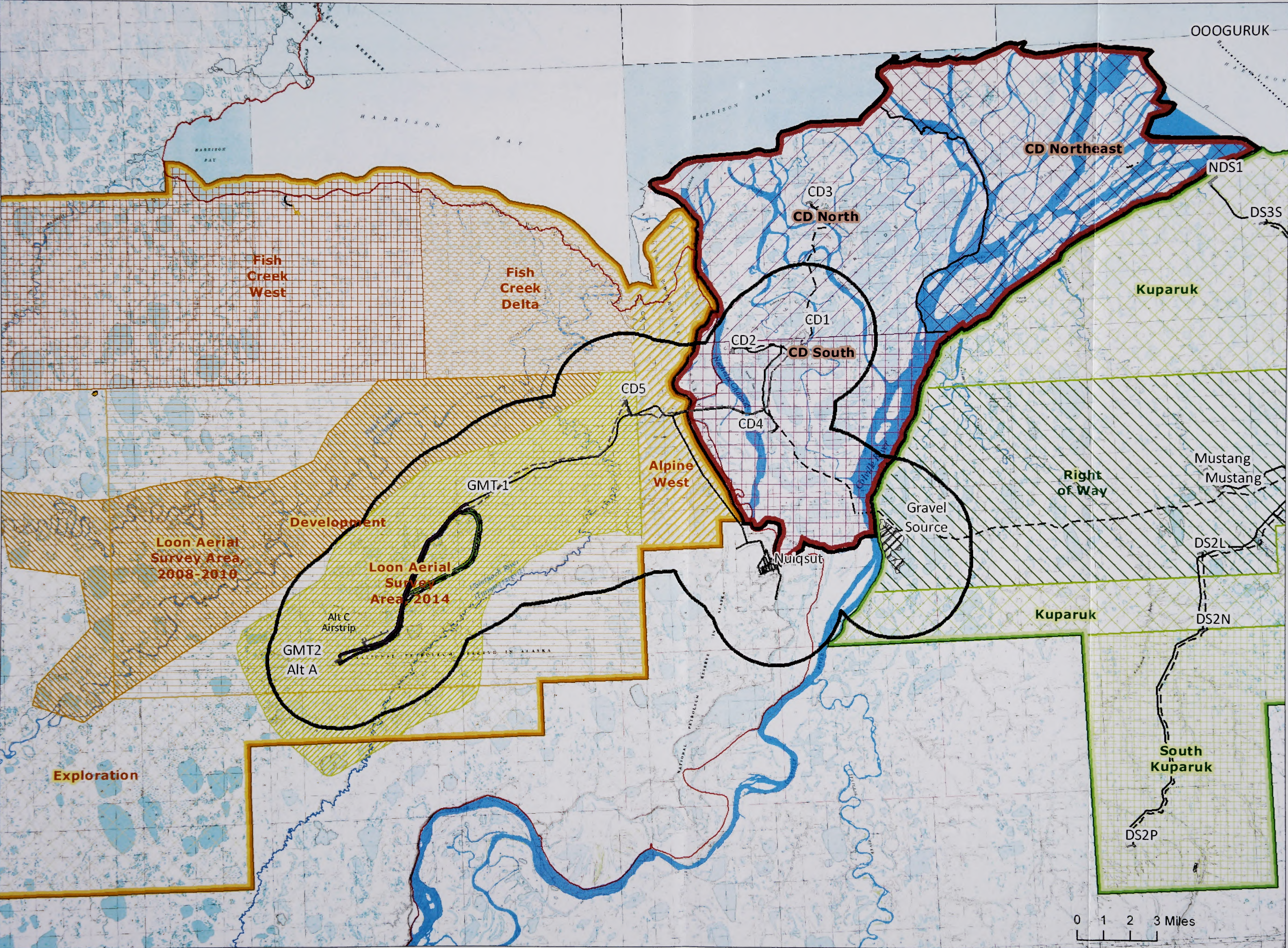
 Road
 Pipeline
 Gravel Source
 Pad

 National Petroleum Reserve in Alaska Boundary

 Project Study Area

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Avian Study Area and Sub-Areas

- Colville Study Area
- Kuparuk Study Area
- NPRA Study Area

GMT-2 Proposed Infrastructure

- Alt. A Pipeline
- Alt. A Road
- Alt. B Pipeline
- Alt. B Road
- GMT-2 Proposed Pads

Existing & GMT-1 Permitted Infrastructure

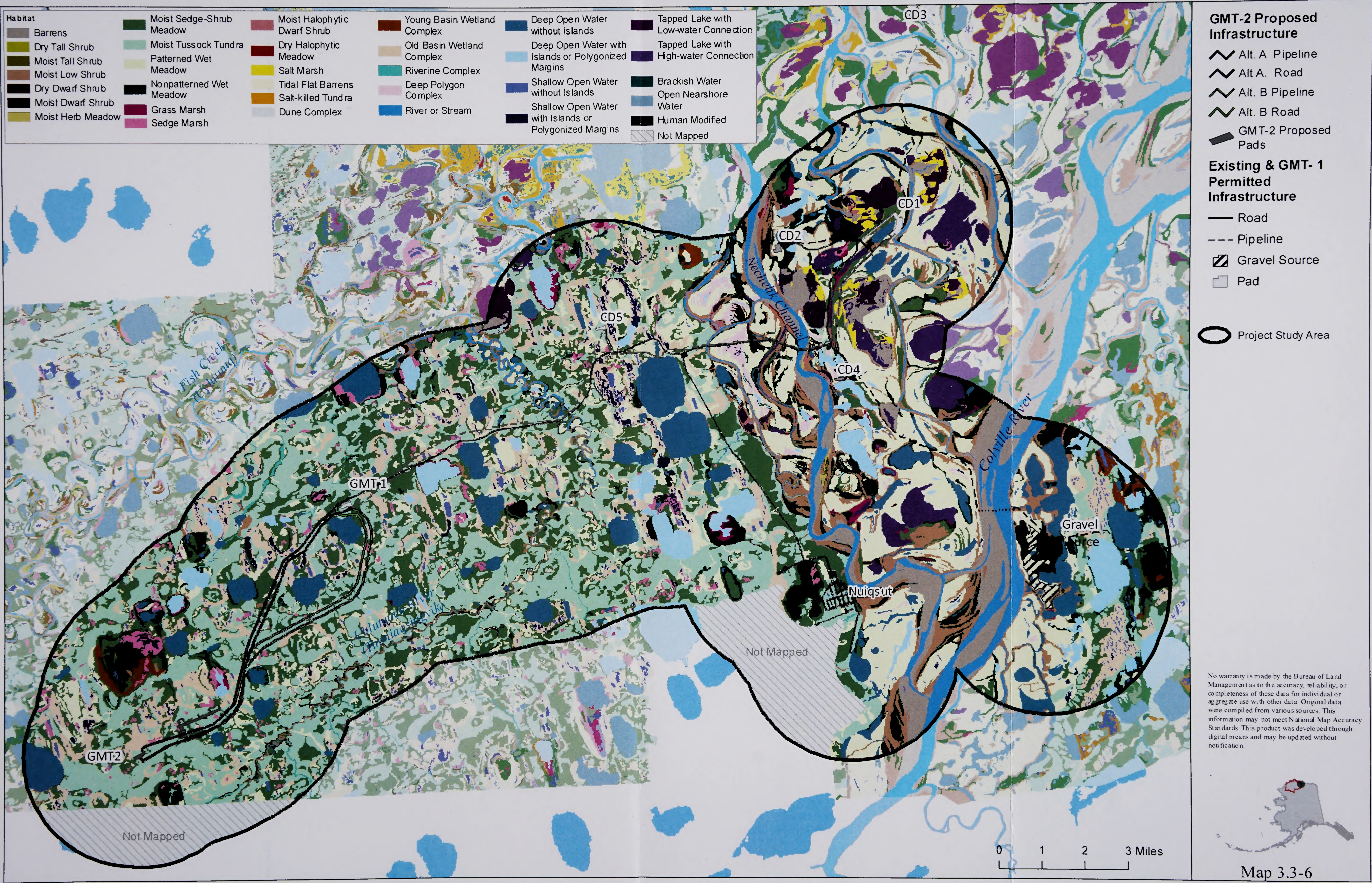
- Road
- Pipeline
- Gravel Source
- Pad

- National Petroleum Reserve in Alaska Boundary
- Project Study Area

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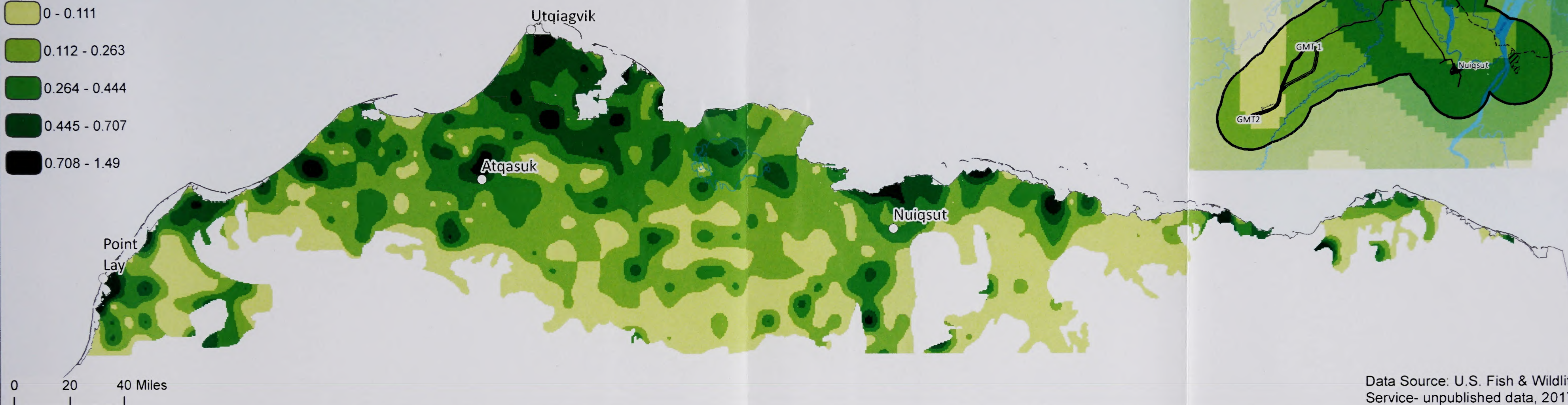
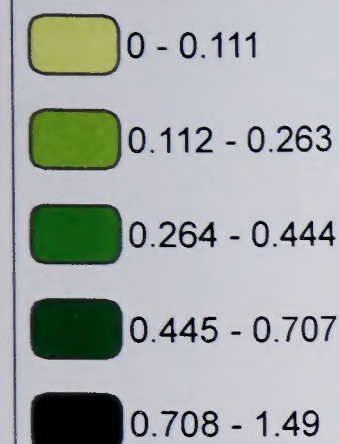
Map 3.3-5





Glaucous gull (GLGU)

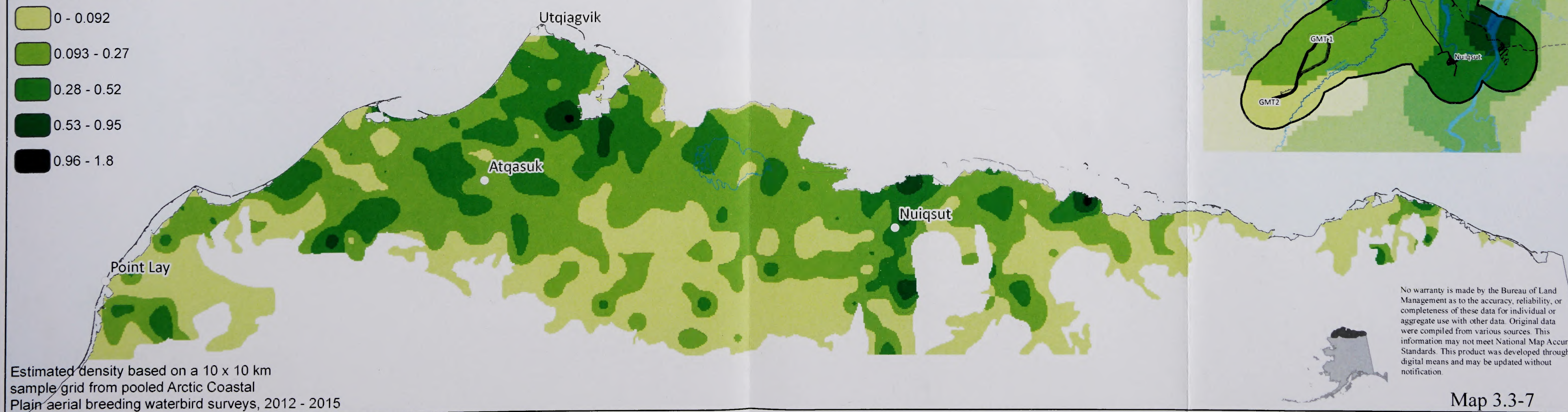
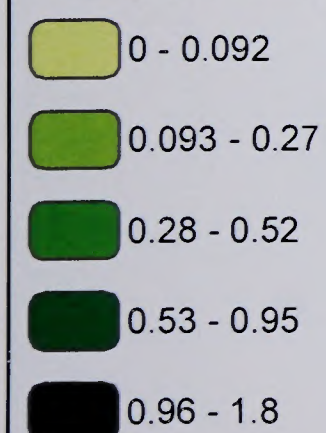
Estimated June
Density (birds/sq. km)



Data Source: U.S. Fish & Wildlife
Service- unpublished data, 2017.

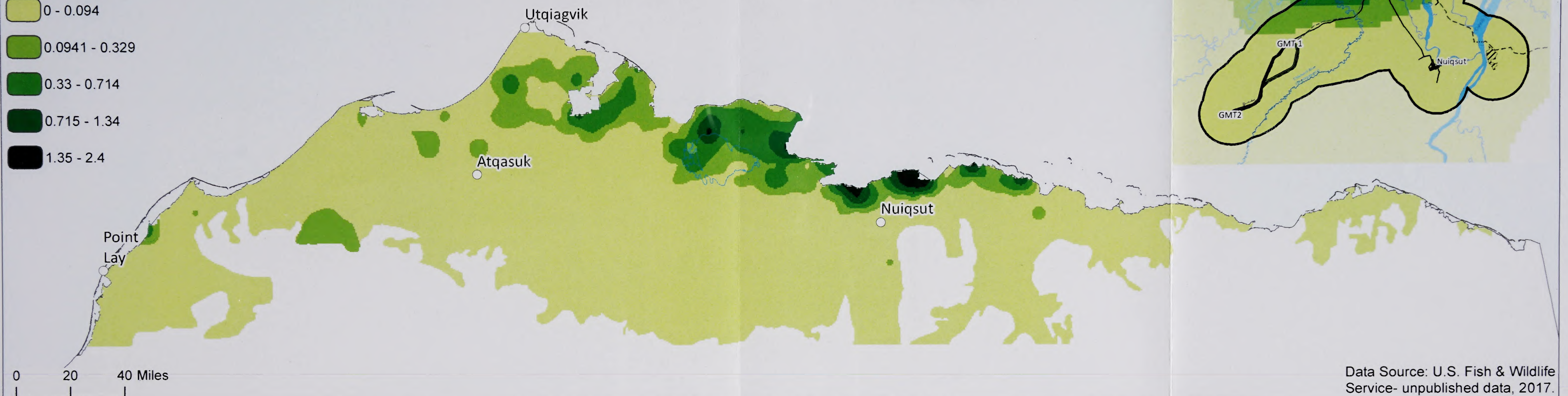
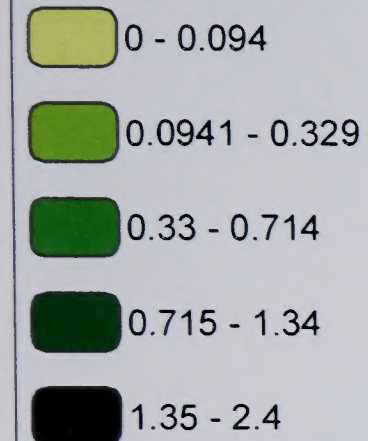
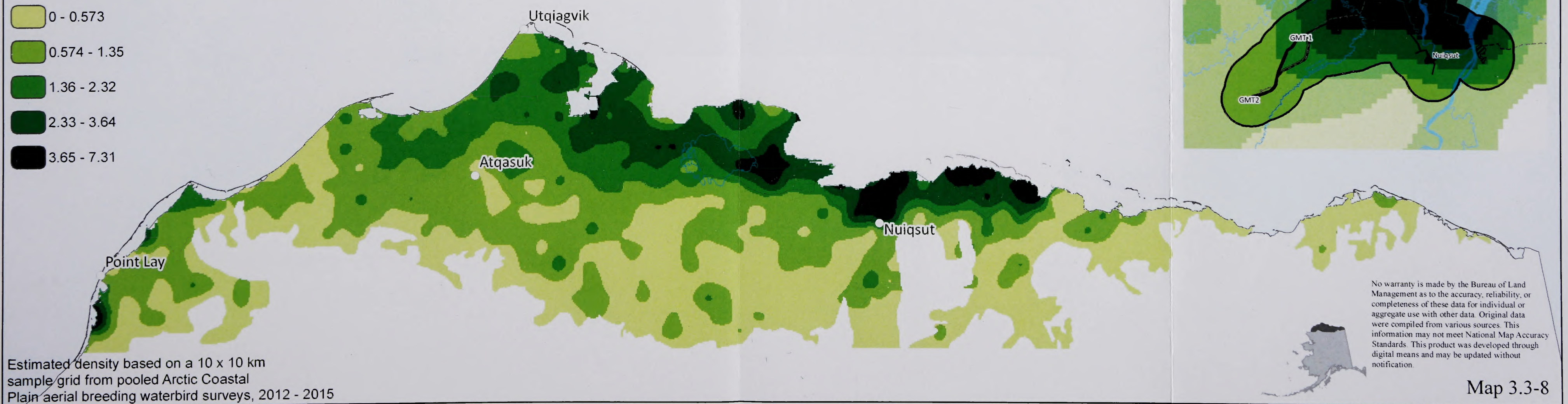
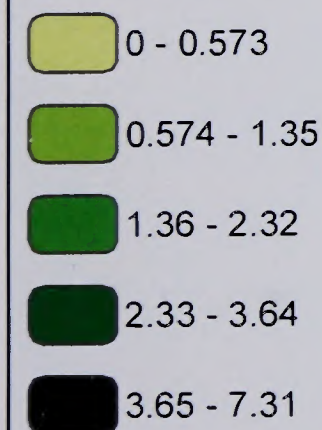
Tundra swan (TUSW)

Estimated June
Density (birds/sq. km)



Estimated density based on a 10 x 10 km
sample grid from pooled Arctic Coastal
Plain aerial breeding waterbird surveys, 2012 - 2015

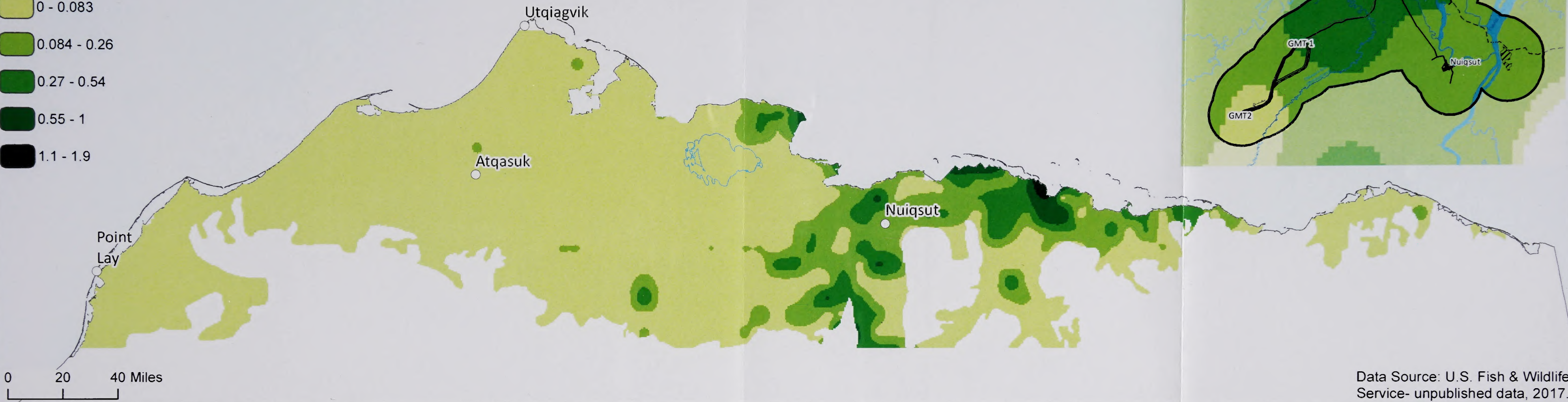
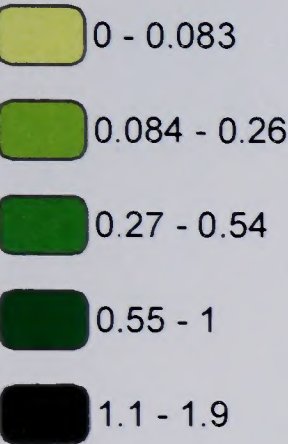
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**Black brant (BLBR)**Estimated June
Density (birds/sq. km)Data Source: U.S. Fish & Wildlife
Service- unpublished data, 2017.**Greater white-fronted goose (GWFG)**Estimated June
Density (birds/sq. km)Estimated density based on a 10 x 10 km
sample grid from pooled Arctic Coastal
Plain aerial breeding waterbird surveys, 2012 - 2015No warranty is made by the Bureau of Land
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Canada goose (CAGO)

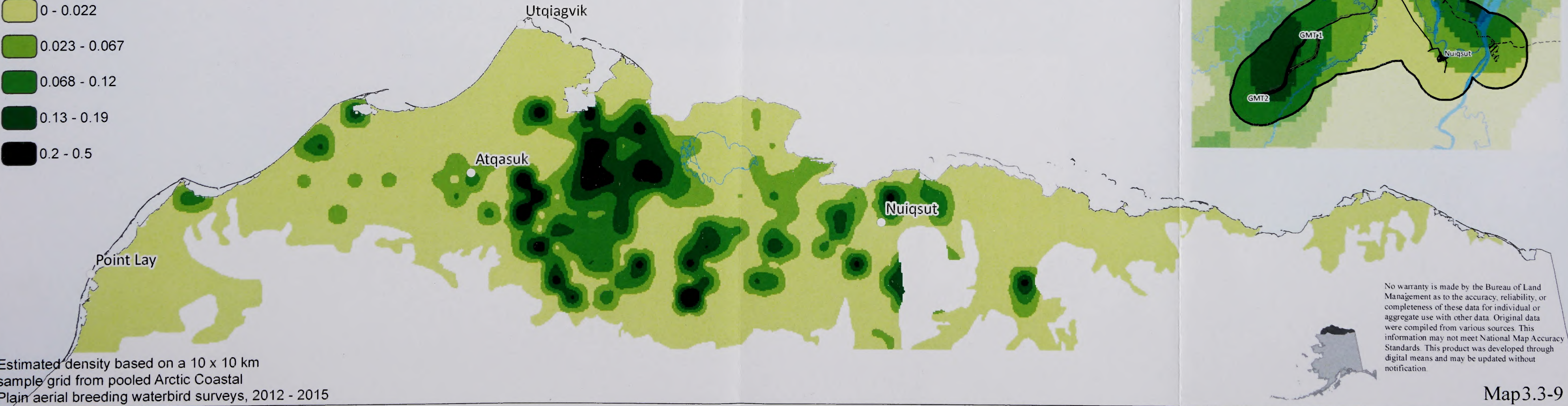
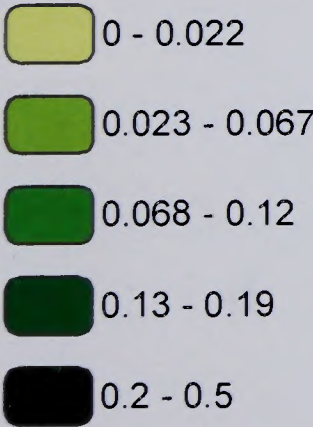
Estimate June Density
(birds/sq. km)



Data Source: U.S. Fish & Wildlife Service- unpublished data, 2017.

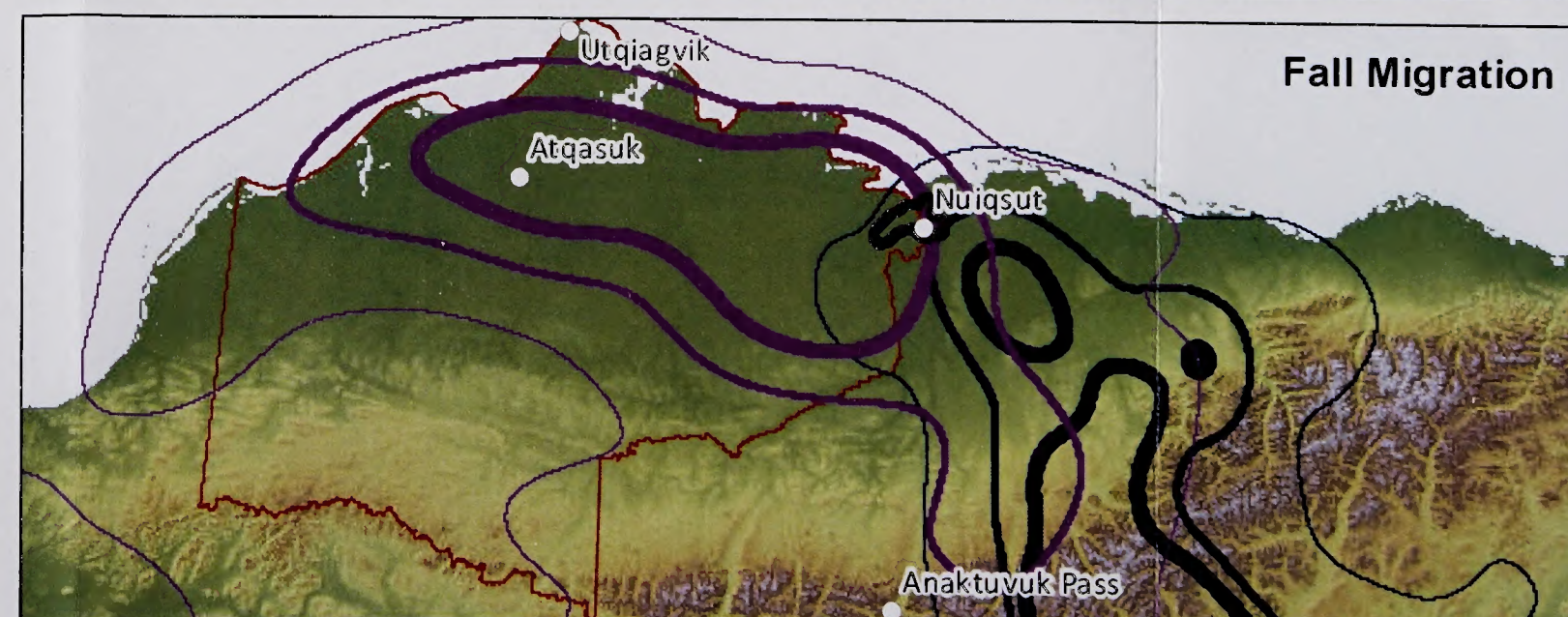
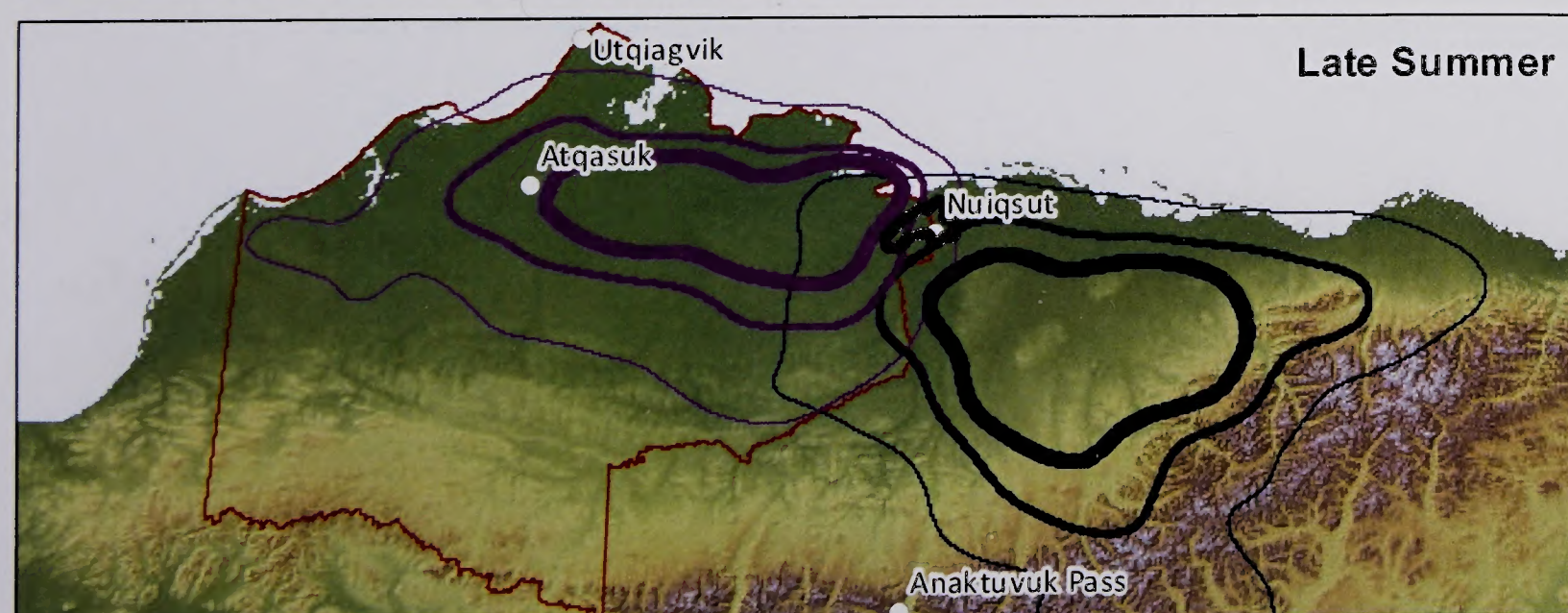
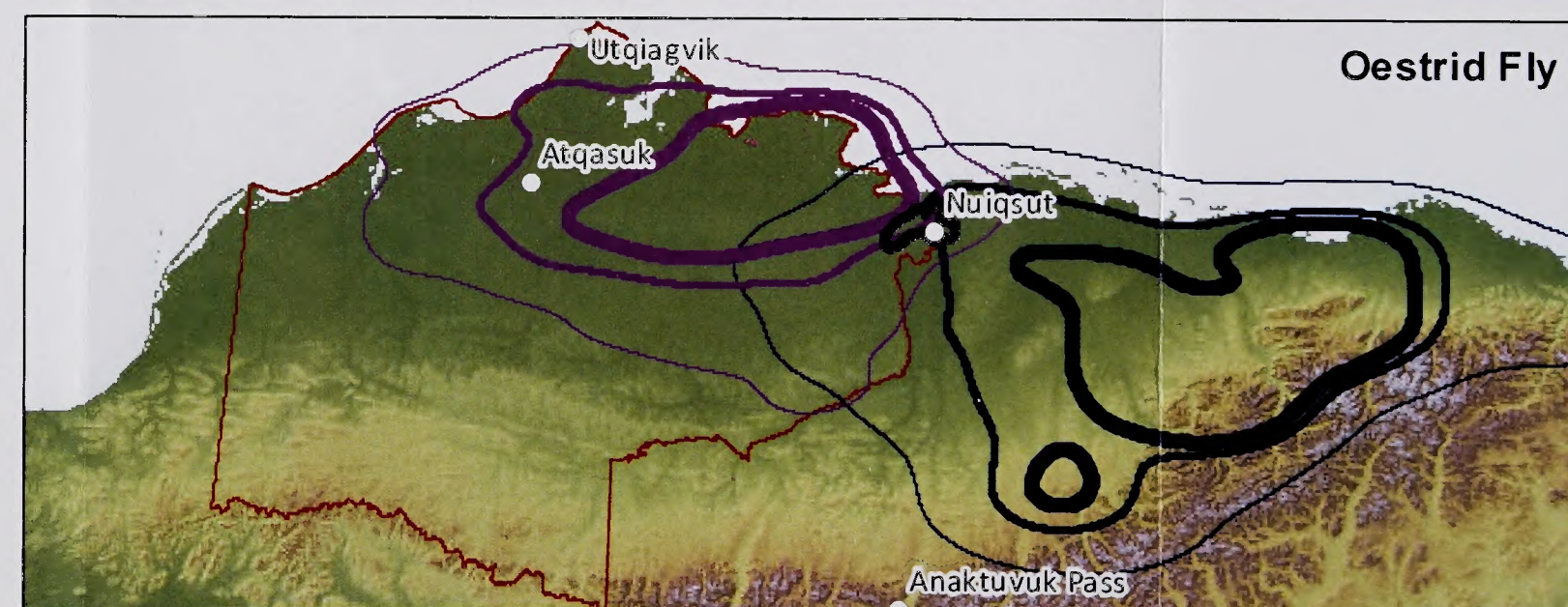
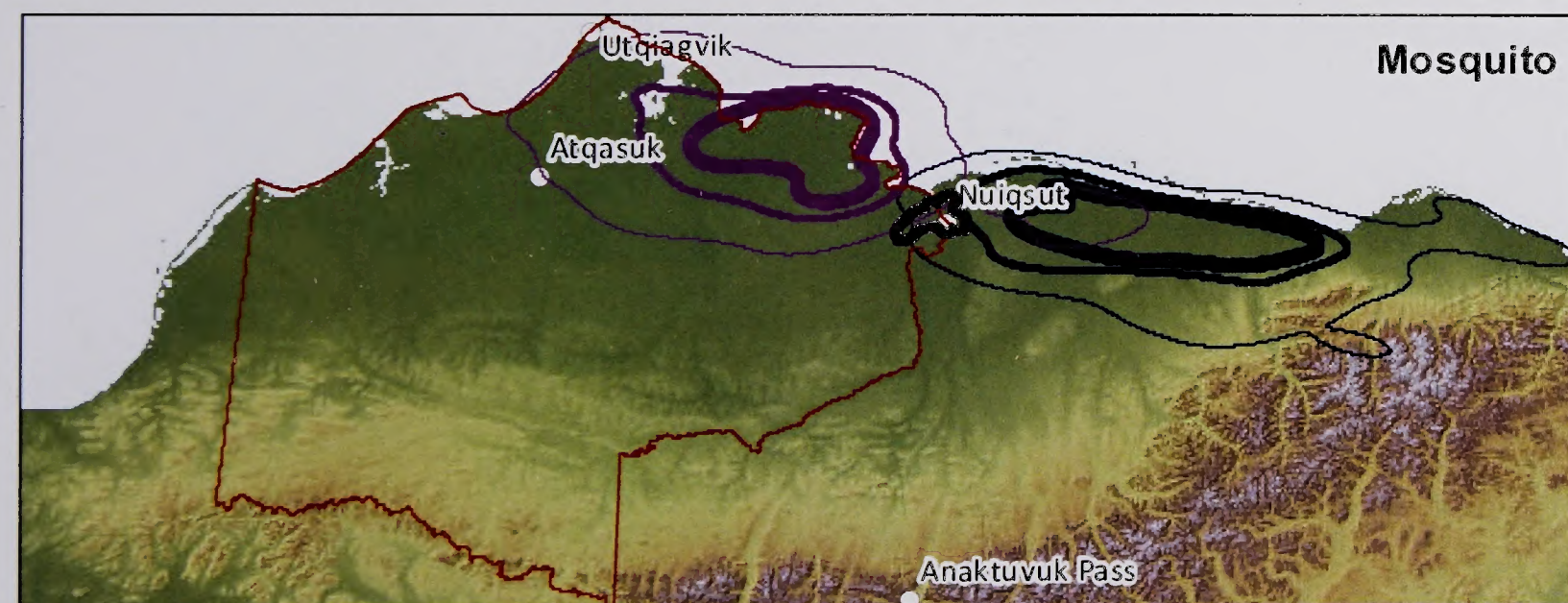
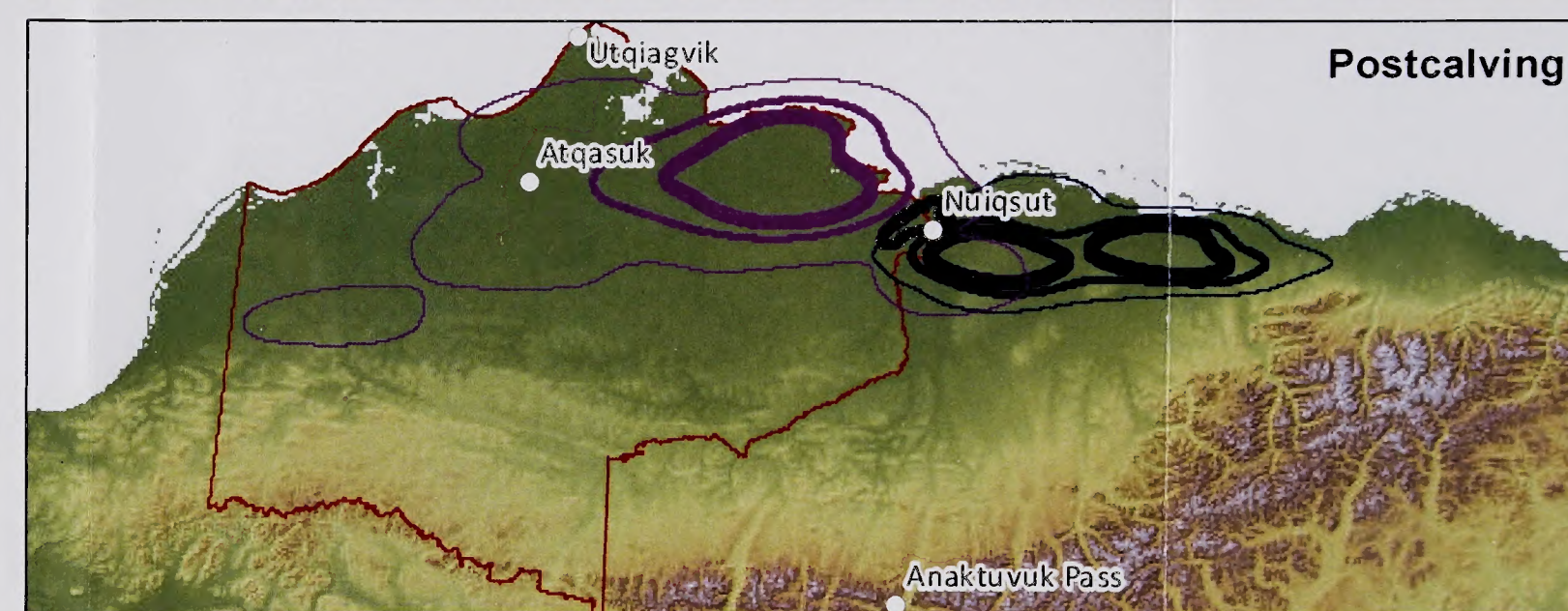
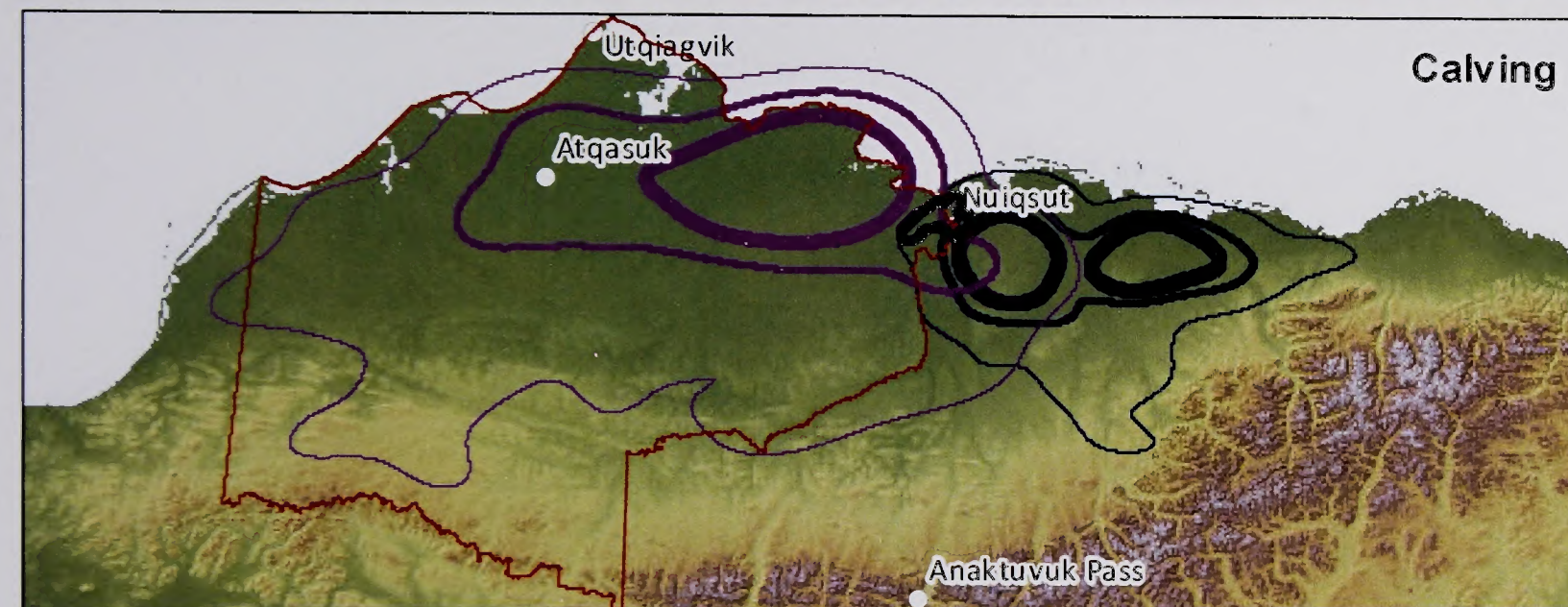
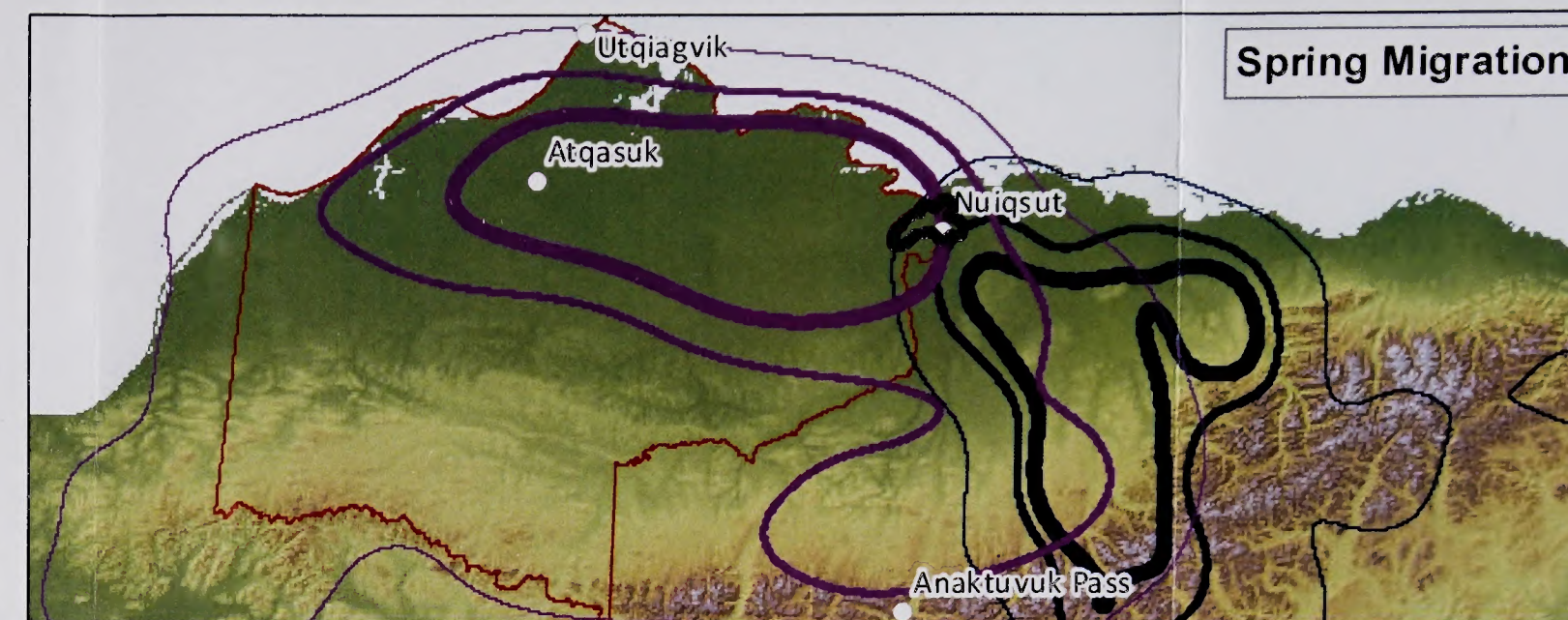
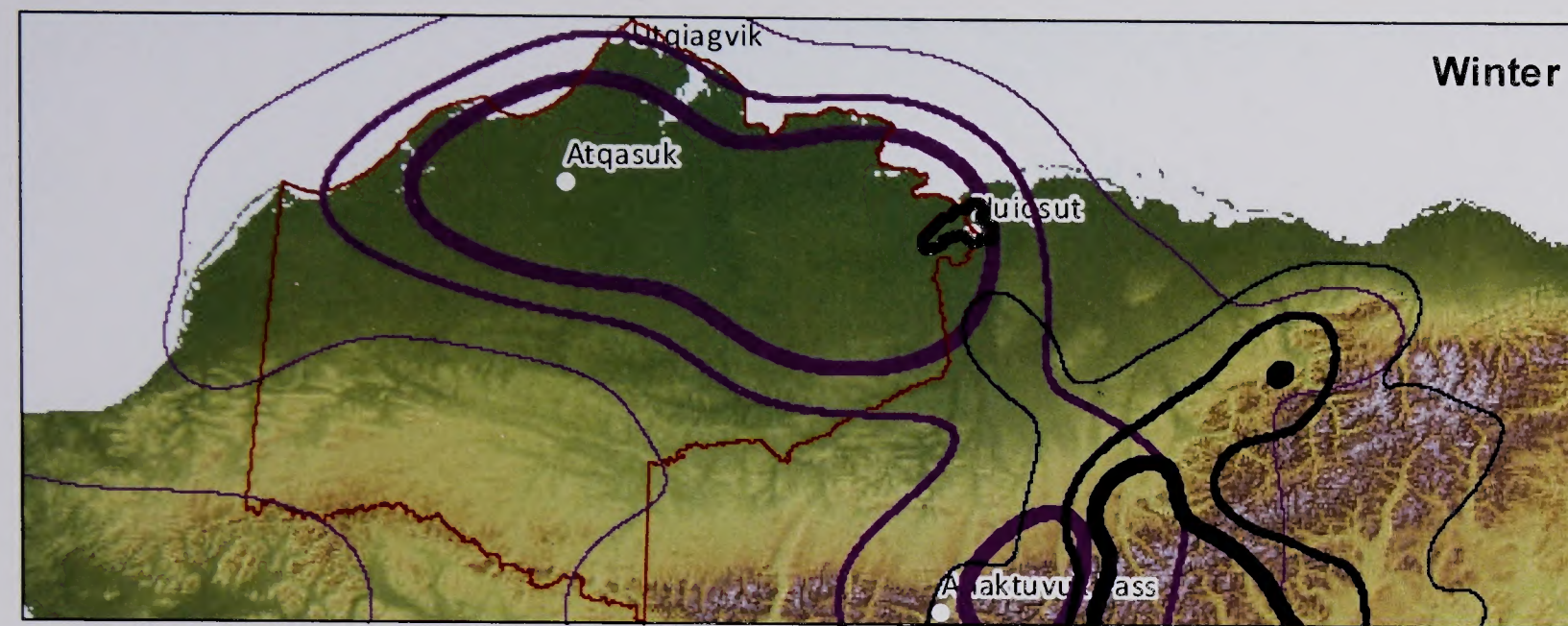
Yellow-billed loon (YBLO)

Estimated June
Density (birds/sq. km)



Estimated density based on a 10 x 10 km sample grid from pooled Arctic Coastal Plain aerial breeding waterbird surveys, 2012 - 2015

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Central Arctic Herd Utilization Contour - Females 2001-2016

- High
- Medium
- Low

Teshkepkuk Lake Herd Utilization Contour - Females 1990-2016

- High
- Medium
- Low

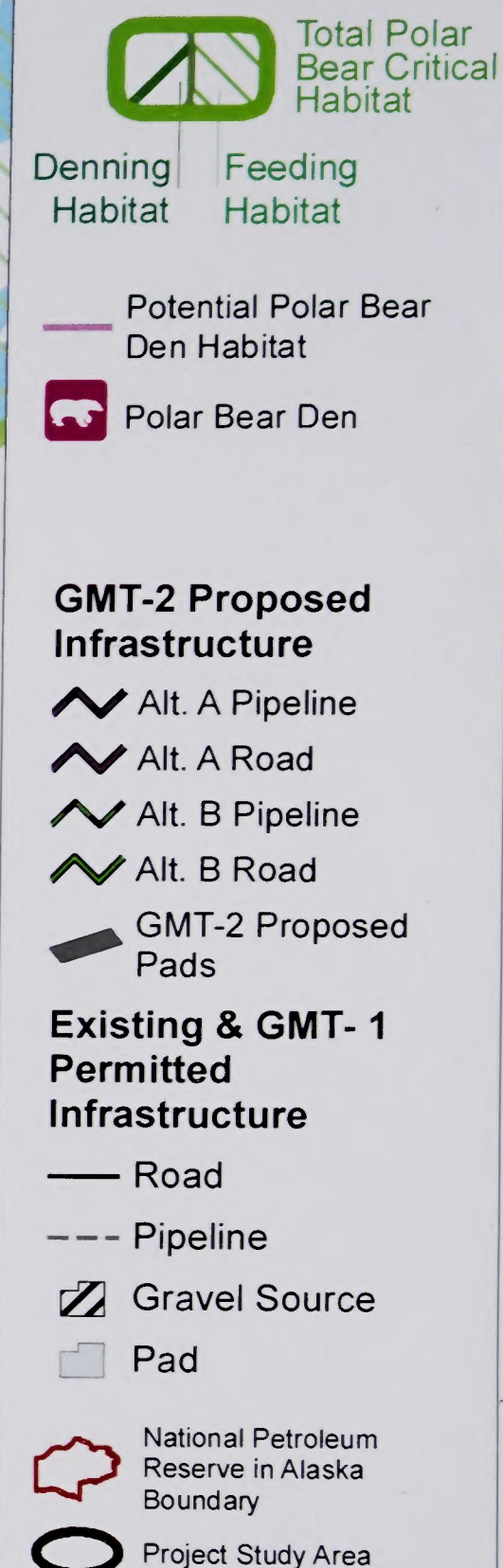
Note: Herd utilization contours from fixed-kernel analysis of locations of radio-collared female caribou. Contours enclose stated percentages of all collar locations. High, medium and low density areas are the 50%, 75% and 95% utilization contours, respectively.

- National Petroleum Reserve in Alaska Boundary
- Project Study Area

0 50 100 Miles

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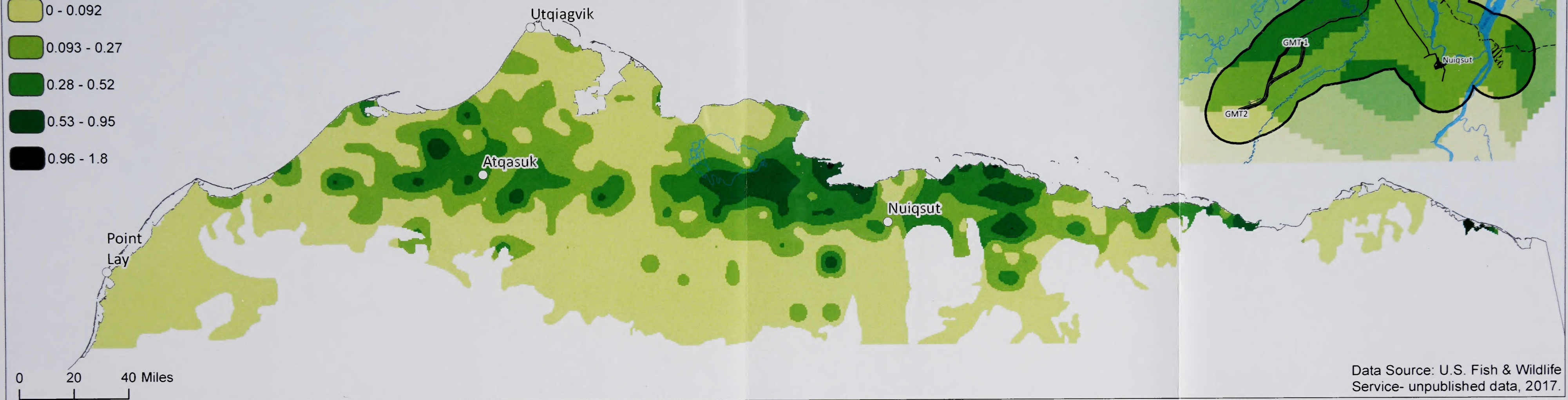
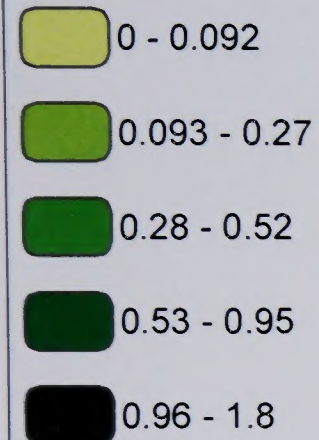
0 1 2 3 Miles

Map 3.3-11



King eider (KIEI)

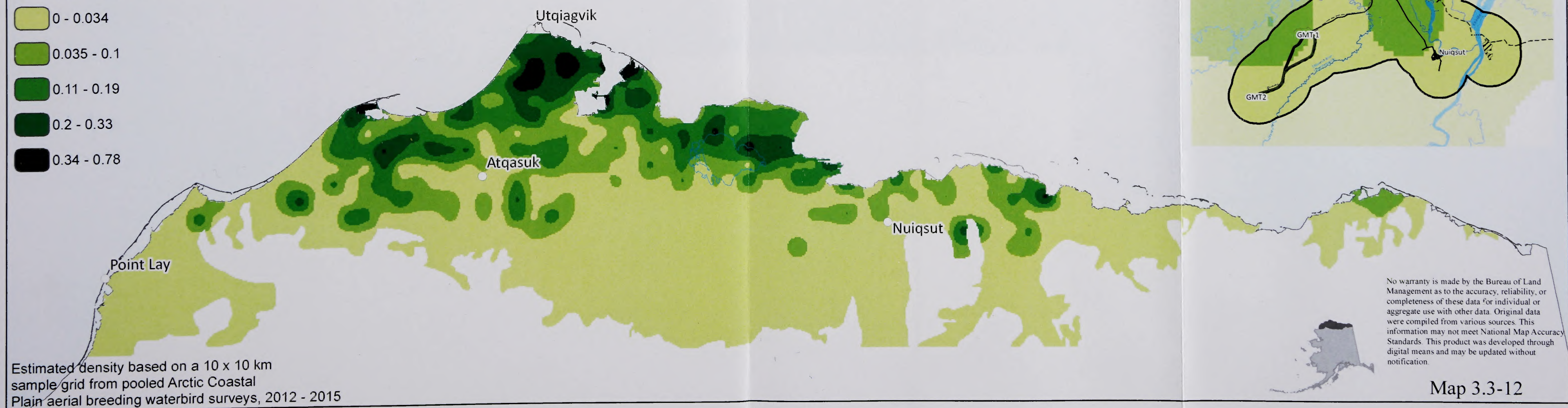
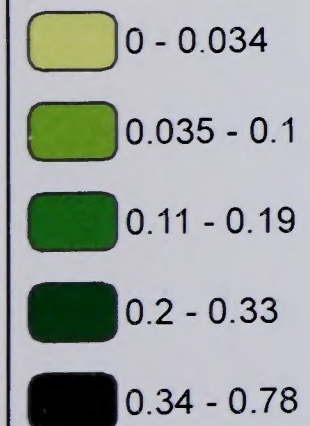
Estimated June
Density (birds/sq. km)



Data Source: U.S. Fish & Wildlife
Service- unpublished data, 2017.

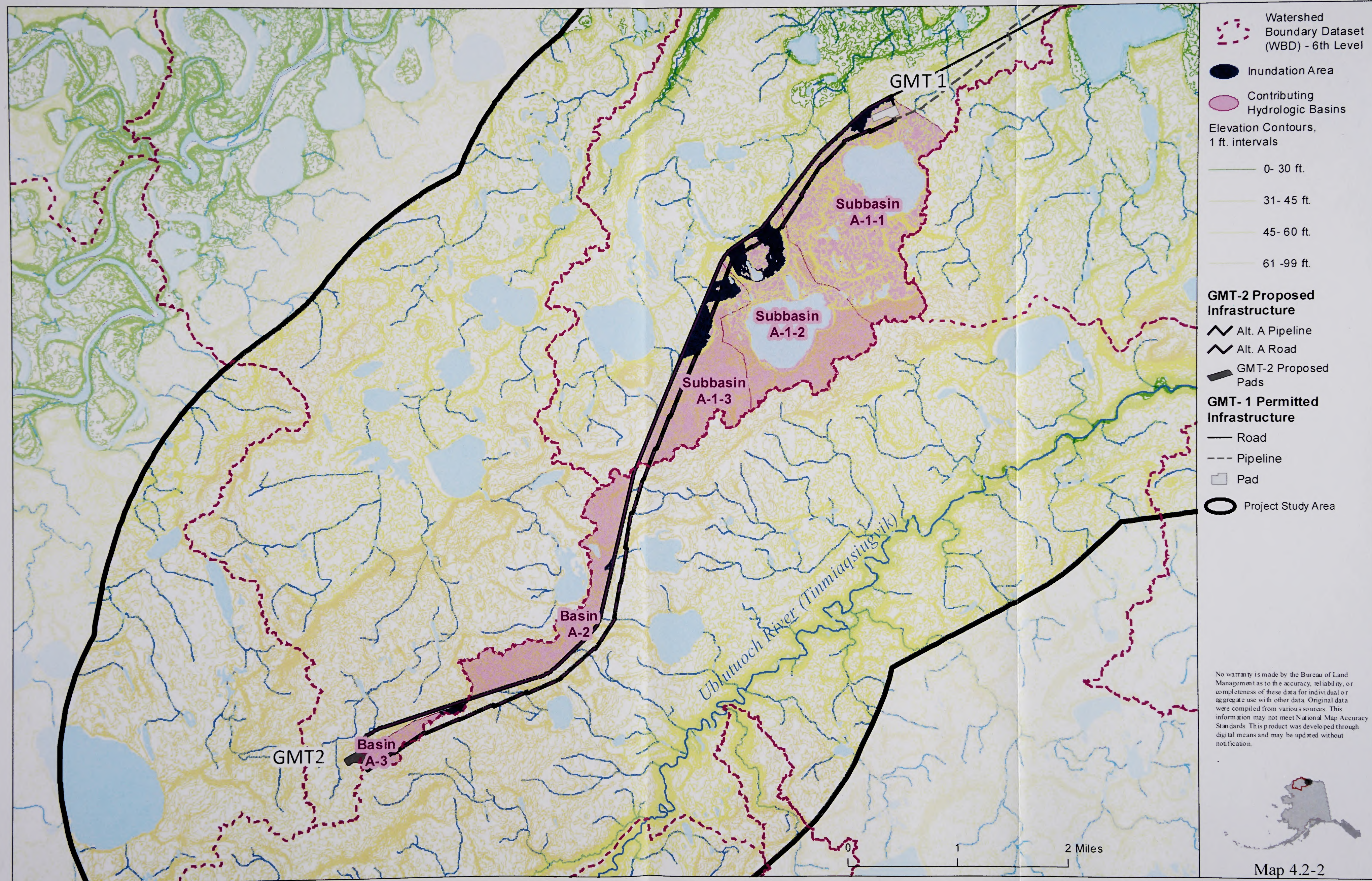
Spectacled eider (SPEI)

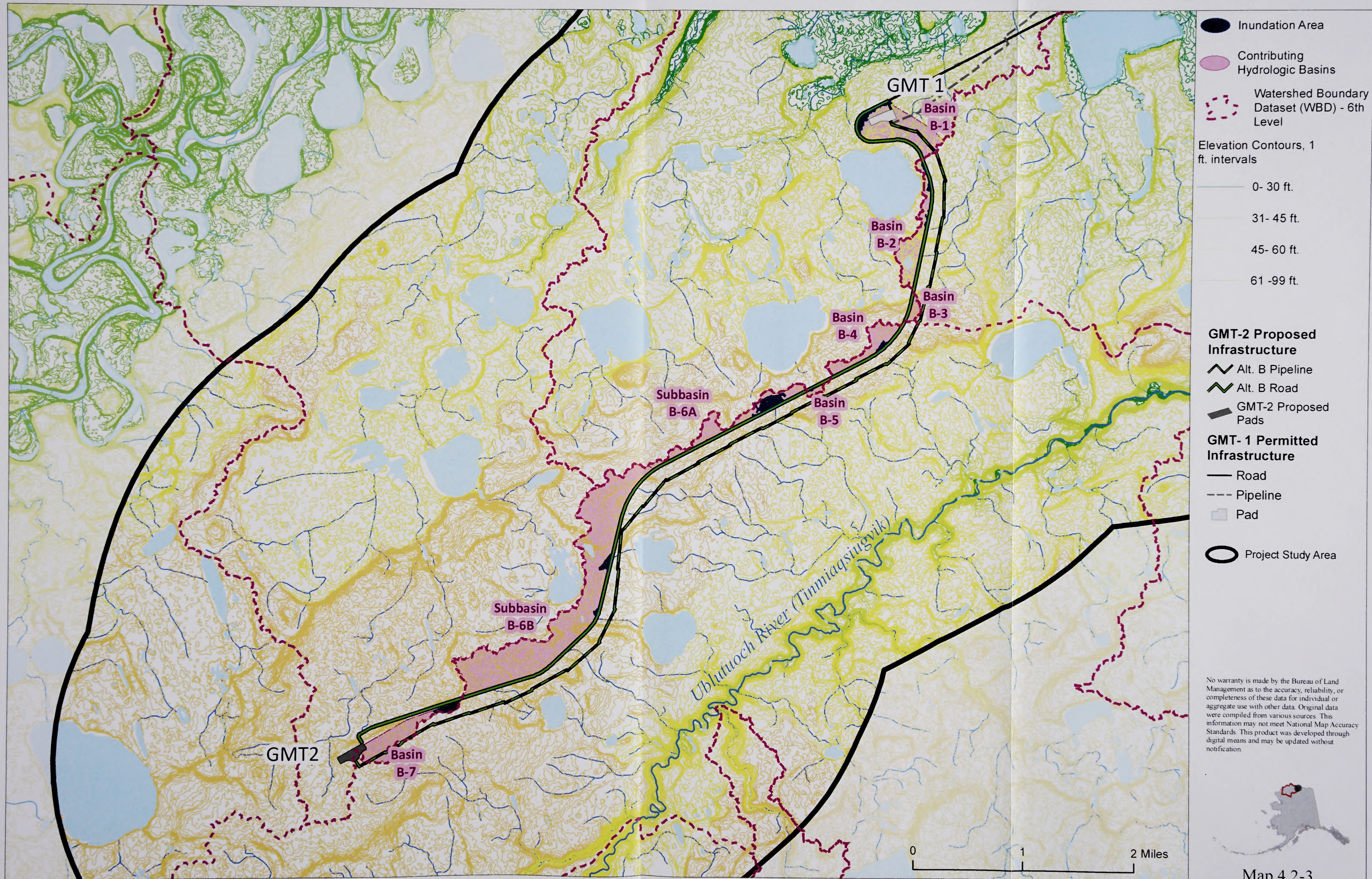
Estimated June
Density (birds/sq. km)

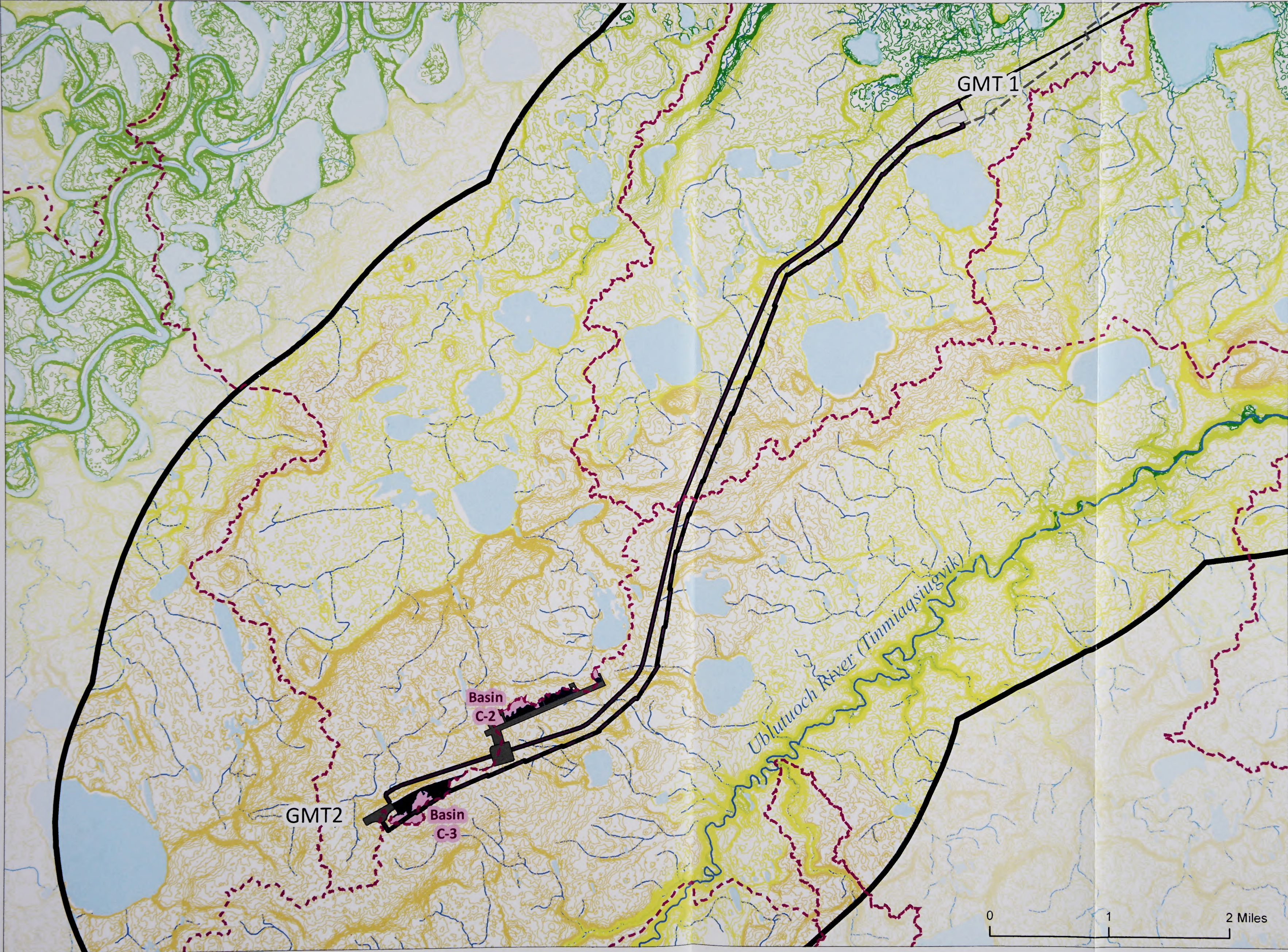


Estimated density based on a 10 x 10 km
sample grid from pooled Arctic Coastal
Plain aerial breeding waterbird surveys, 2012 - 2015

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Management as to the accuracy, reliability, or
completeness of these data for individual or
aggregate use with other data. Original data
were compiled from various sources. This
information may not meet National Map Accuracy
Standards. This product was developed through
digital means and may be updated without
notification.







- Inundation Area
- Contributing Hydrologic Basins
- Watershed Boundary Dataset (WBD) - 6th Level
- Elevation Contours, One foot intervals
 - 0- 30 ft.
 - 31- 45 ft.
 - 45- 60 ft.
 - 61 -99 ft.
- GMT-2 Proposed Infrastructure**
 - Alt. A Pipeline
 - Alt. A Road
 - GMT-2 Proposed Pads
- GMT- 1 Permitted Infrastructure**
 - Road
 - Pipeline
 - Pad
- Project Study Area

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Map 4.2-4



Vegetation Types in Indirect Impact Area- 328 ft. beyond gravel infrastructure -pads and roads (see Table 4.3-3)

GMT-2 Proposed Infrastructure

- Alt. A Pipeline
- Alt. A Road
- Alt. B Pipeline
- Alt. B Road
- GMT-2 Proposed Pads

Existing & GMT- 1 Permitted Infrastructure

- Road
- Pipeline
- Pad

GMT-2 Project Area

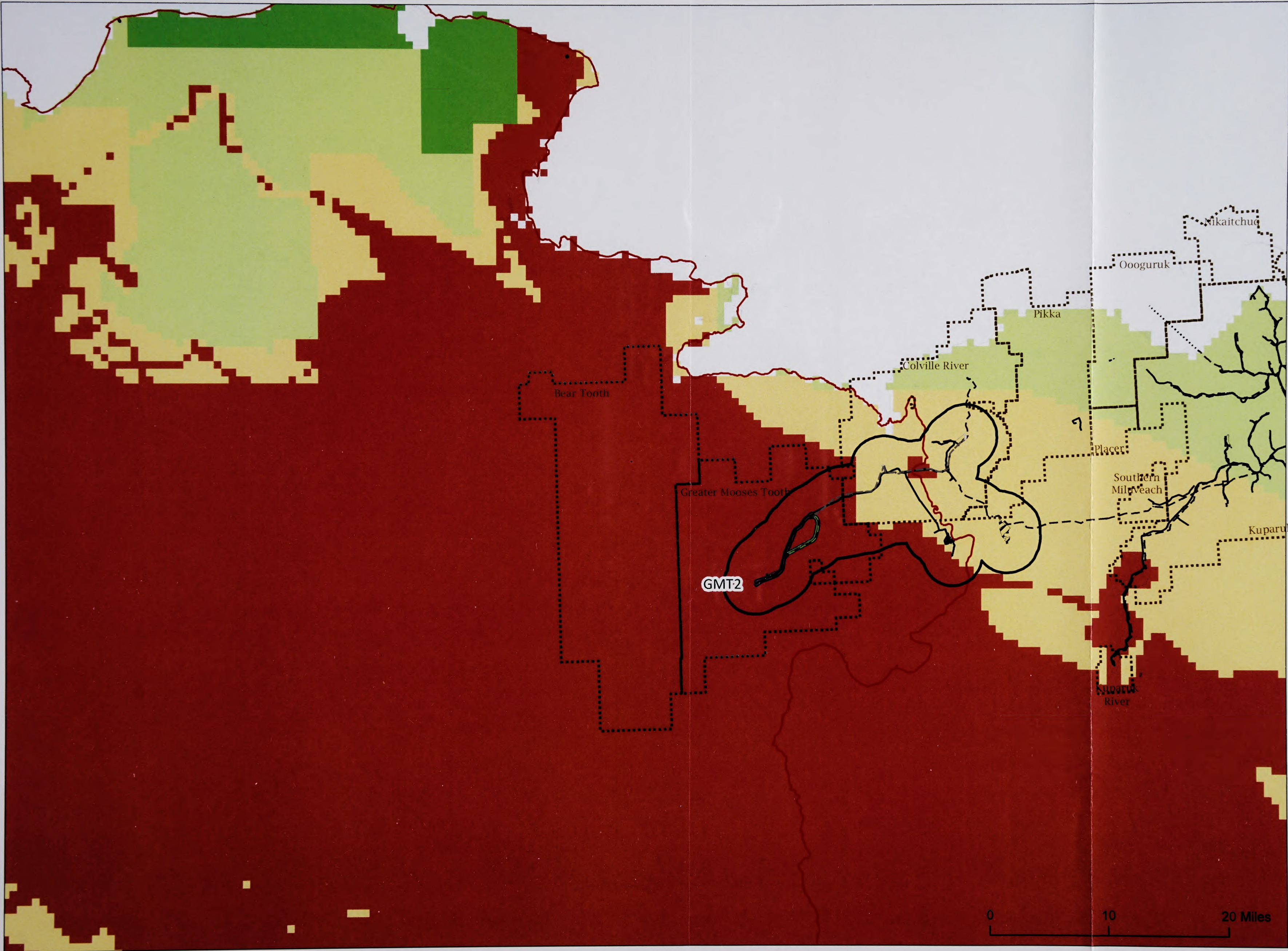
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Map 4.3-1

Vegetation Type

Open Low Willow	Cassiope Dwarf Shrub Tundra	Moist Sedge-Shrub Tundra	Tussock Tundra	Wet Sedge Meadow Tundra	Fresh Sedge Marsh	Ice-rich Basin Wetland Complex	Fresh Water
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Teshekpuk Caribou Herd Females Fall Migration Movements

Brownian Bridge Analysis

- Low use
- Moderately-low use
- Moderately-high use
- High use

Data analysis by Lincoln Parrett of ADF&G
Data gathered cooperatively by ADF&G, NSB, and BLM.

Oil & Gas Producing Unit

GMT-2 Proposed Infrastructure

- Alt. A Pipeline
- Alt. A. Road
- Alt. B Pipeline
- Alt. B Road
- GMT-2 Proposed Pads

Existing & GMT- 1 Permitted Infrastructure

- Road
- Pipeline
- Gravel Source
- Pad

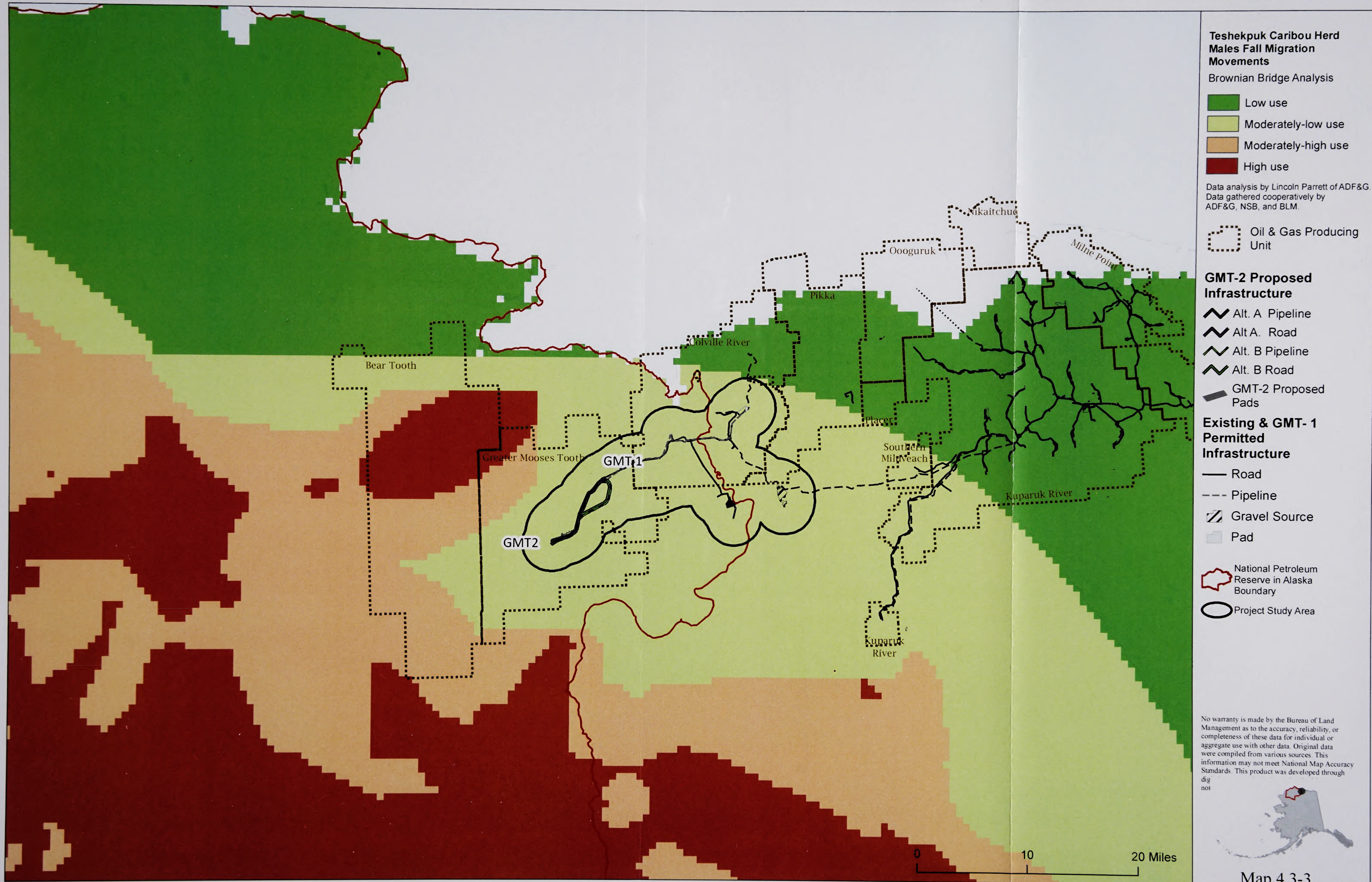
National Petroleum Reserve in Alaska Boundary

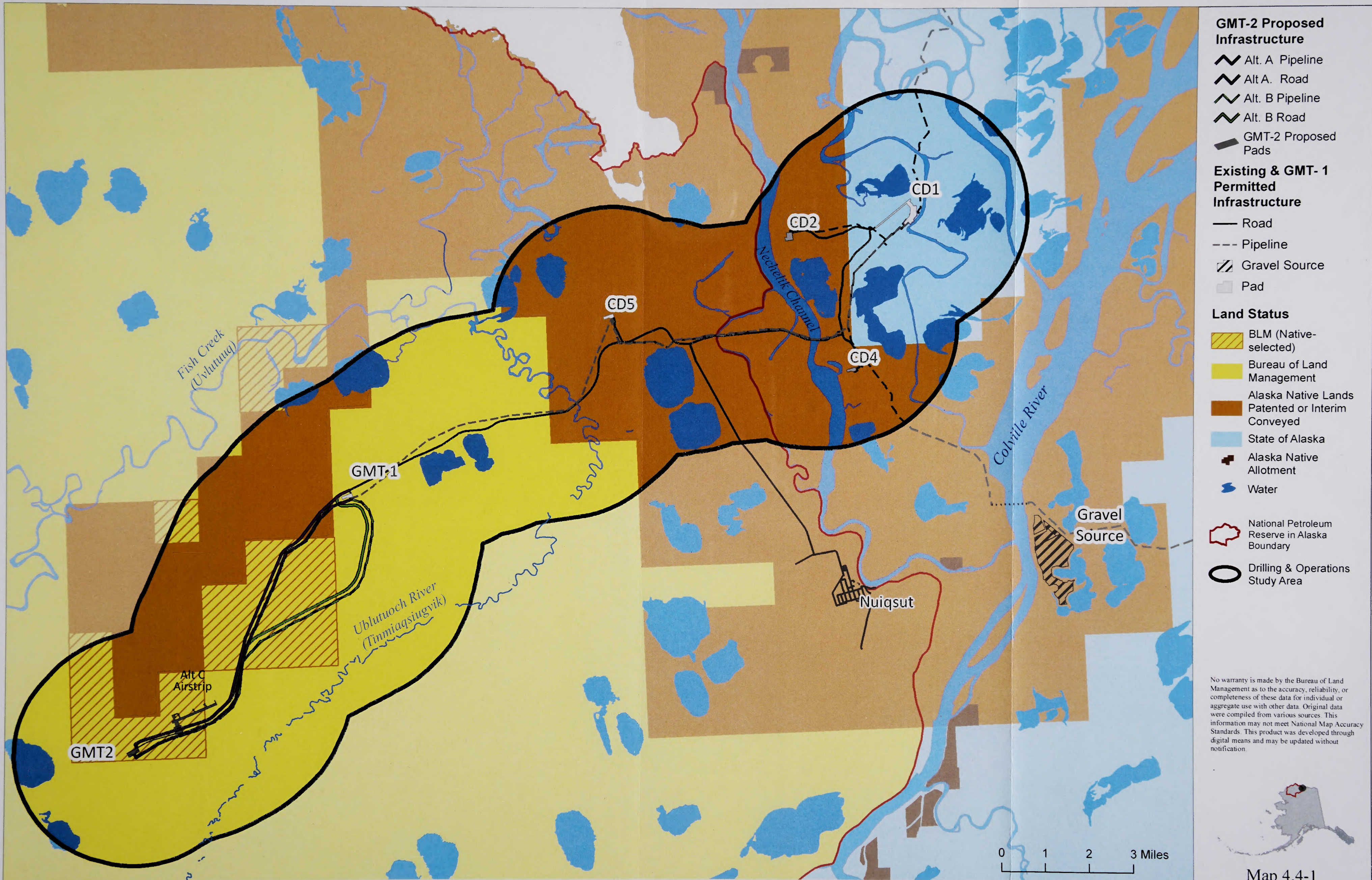
Project Study Area

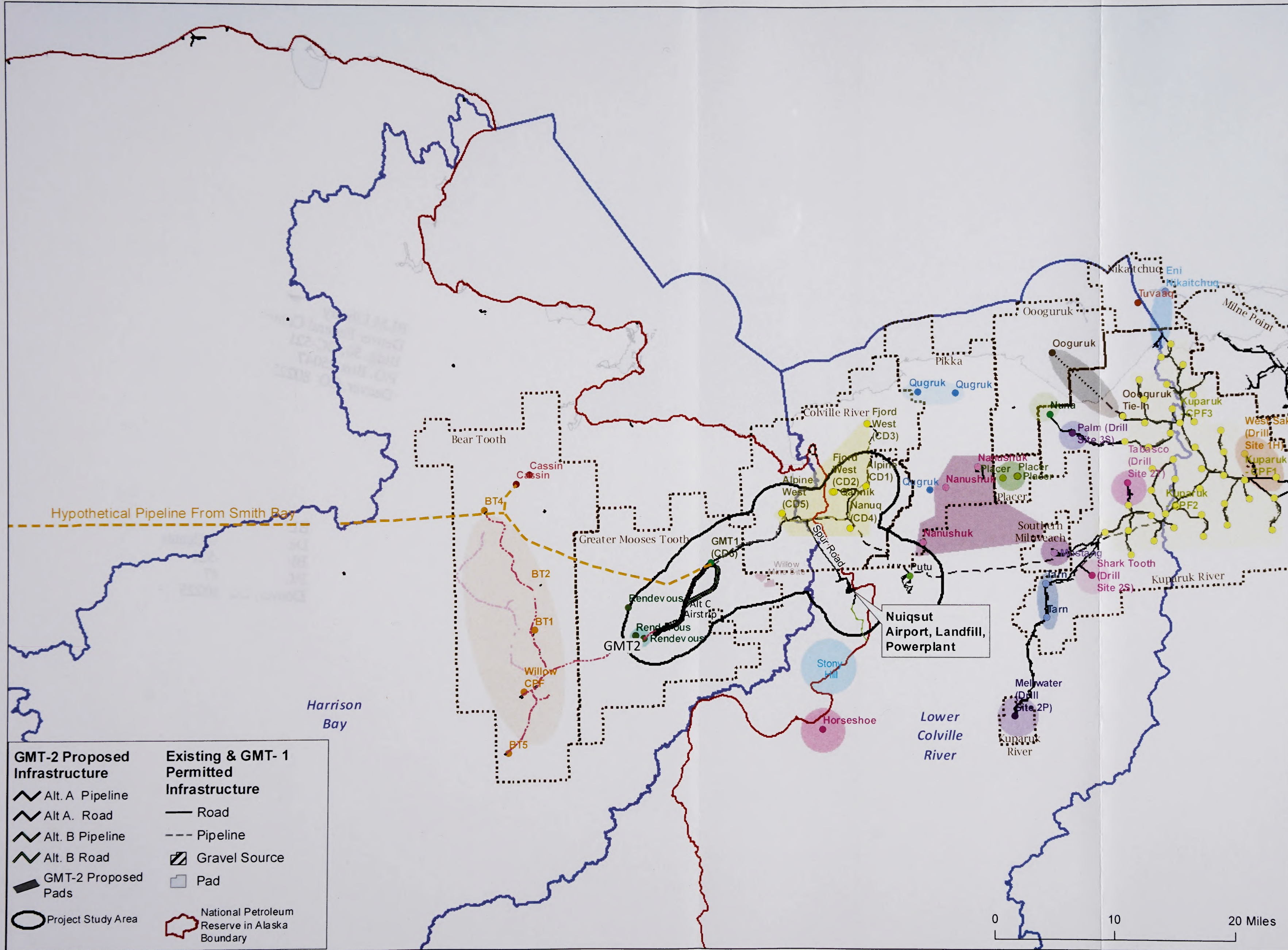
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Map 4.3-2







Past, Present or Reasonably Foreseeable Oil and Gas Development

- Oil and Gas Development Area Representation*
- Well Location

*Cartographic representation only. Intended to help indicate project size and scope, not based on ground-truthed or geologic information.

- Colville River Access Road
- Hypothetical Pipeline (Source: NSSI Scenarios)
- Oil & Gas Producing Unit
- Watershed Boundaries

Proposed Willow Project Infrastructure

- Road
- Gravel Mine

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Map 4.6-1

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